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ABSTRACT

This report describes a workshop designed and implemented as a team effort by teachers from the vocational education and special education departments at the University of Illinois and the University of Kansas. It is noted that activities at the workshop revolved around meeting the unique needs of ten university-state department teams in developing and/or expanding their programs. In addition to being useful to vocational and special educators interested in the personnel preparation process, this report is also designed for use by those individuals in local educational agencies who have the responsibility for staff development and inservice education. Part I describes the presentations and activities of the workshop, pre-workshop planning, and post-workshop followup. An evaluation of each of these major phases is also included. Part II is a description and analysis of the professional tasks which were identified as critical for personnel involved in vocational programming for special needs students. The * personnel preparation models prepared by the ten attending teams are included in Part III. A list of participants, bibliography, and 11 appendixes (relating to the workshop and special education) are included. (HD)

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VOCATIONAL EDUCATION FOR SPECIAL NEEDS STUDENTS:
COMPETENCIES AND MODELS FOR PERSONNEL PREPARATION

FINAL REPORT

by

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U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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A Report on the

National Workshop on Vocational Education for Special Needs Students

January 12-15, 1976

Bureau of Educational Research
University of Illinois, Urbana-Champaign

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PREFACE

This report is the result of a workshop which addressed a growing and highly critical concern. One out of ten school age children in America has been identified as handicapped. Largely because of state and federal legislation, schools are now accepting their responsibility in educating these children with special needs.¹ However, not all of the teachers who are being asked to teach special needs students are adequately prepared for this role. This is especially true at the secondary level where students are in need of vocational as well as academic programming. Vocational education teachers are not generally prepared by education or experience to successfully teach special needs students, and special education teachers generally do not have the vocational education experience or preparation necessary to fully prepare students for the world of work.

At the local level there have been some outstanding inservice programs developed to meet the needs of these teachers. It is apparent, however, that more significant steps should be taken at the university level to provide avenues for the improvement of practicing teachers as well as those planning to teach special needs students in vocational programs. These teachers and prospective teachers have a dual role to perform. They must be vocationally competent and at the same time fully able to teach a broad range of students, including those with learning, behavioral, and/or physical difficulties. How should programs be designed and implemented so that teachers are prepared for this role, or successfully re-trained?

Many believe that cooperation and communication between vocational teacher educators and special teacher educators is central to resolving or at least approaching this issue. The purpose of the national workshop described herein was to create a situation and set of circumstances which would encourage and contribute to the integration of vocational and special education in universities across the country. Without a meaningful liaison between these two fields of education, special needs students will undoubtedly not be served to the fullest extent possible.

¹The terms "special needs" and "handicapped" will be used interchangeably throughout this report since a special need implies a handicap in school whether due to disability, disadvantage, or dysfunctional school placement.

In order to accomplish this, the workshop was designed and implemented as a team effort. Sponsorship, planning, and conduct of the workshop was a collaborative effort between the University of Illinois and the University of Kansas. Universities interested in participating were asked to develop a mini-proposal with joint participation from vocational teacher education and special teacher education departments. Activities at the workshop revolved around meeting the unique needs of ten university-state department teams in developing and/or expanding their programs. The individual presentations by Drs. Clark, Evans and Guemple as well as Ms. Marion and Mr. Puciński were chosen to stimulate team answers to current issues and problems. The program presentations by the Universities of Missouri, Kansas, and Vermont, and Dr. Marc Gold were chosen to help the teams crystallize their program development efforts based on their initial planning. The remainder of the workshop was devoted to a small group session and a series of team meetings. This gave teams an opportunity to assess needed personnel competencies, and spend concentrated time on developing action plans for their personnel preparation programs.

The purpose of this report is three fold:

1. To describe and communicate the project and workshop activities.
- .. To identify a series of professional tasks needing to be performed by personnel involved in the vocational programming of special needs students.
3. To describe a series of personnel preparation models for the vocational programming of special needs students.

Part I of the document describes the: (A) presentations and activities of the workshop, (B) preworkshop planning and (C) post-workshop follow-up. An evaluation of each of these major phases of the workshop project is also included. Part II is a description and analysis of the professional tasks which were identified as critical for personnel involved in vocational programming for special needs students. Finally, the personnel preparation models developed by the ten attending teams are included in Part III.

It is hoped that this report will be useful to both vocational and special educators who are interested in the personnel preparation process. It is designed to be used not only by individuals involved with college and university teacher education programs, but also by those individuals in local educational agencies who have the responsibility for staff development and inservice education. If the workshop activities and personnel preparation models and ideas presented in this report are in any way a help to teacher educators, administrators, teachers, and other concerned with vocational programming for the special needs students, it will have accomplished its purpose.

The national workshop and this resulting report would not have been possible had it not been for the invaluable guidance and assistance of a number of individuals and agencies. Dr. Allen Phelps, Project Coordinator and developer, had the major responsibility for the smooth running of the workshop from its inception to completion, including the preparation of this report.

In her role as workshop coordinator, Elizabeth Abbas was instrumental in efficiently planning and coordinating many of the project and workshop activities. Ms. Patricia Bitlington served as coordinator for the University of Kansas subcontract, and assisted in numerous project activities. Kent Frison designed and conducted the evaluation of the workshop and follow-up activities. His efforts were much appreciated and are included in this report.

The members of our steering committee provided much appreciated direction and support for several critical aspects of the workshop. A list of these individuals and their respective institutions can be found in Appendix O.

The guidance provided by staff members of the U.S. Office of Education and the Illinois Office of Education contributed immeasurably to the project effort. Muriel Tapman, Glee Saunders, Duane Nielsen, Elmer Schick, William Reynolds, Charles Hempstead, and James Haire deserve special thanks for their enthusiasm and support.

The very capable and supportive staff of the Bureau of Educational Research, under the direction of Dr. William P. McLure, contributed significantly to the project. Secretaries Shirley Lockard, Liz Crouse, and James Poepsel and Carma Diel who managed the financial aspects of the project provided efficient and highly competent assistance. Mr. Delmar Burgin of the College of Education also deserves commendation for his assistance with the fiscal management of the project.

Finally, the project staff wishes to acknowledge the efforts and commitments of the national workshop participants. Each of the ten teams which were involved in the workshop has demonstrated a significant and continuing commitment to the preparation of personnel for serving special needs learners in vocational programs. Their willingness and enthusiasm for sharing ideas exemplifies the cooperative spirit which is so vitally important to the improvement of educational programs for students who are special.

*Rupert H. Evans
Gary M. Clark*

June, 1976

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PART I. THE NATIONAL SPECIAL NEEDS TEACHER EDUCATION
WORKSHOP: ACTIVITIES, PLANNING, AND FOLLOW-UP

This initial section of the report provides a description and evaluation of the three major phases of the national workshop. The workshop activities, as well as the pre-workshop planning and post-workshop follow-up are described in Part I.

WORKSHOP ACTIVITIES

This section of Part I of the report describes the activities which occurred at the national workshop. It includes the agenda of activities, each of the major presentations delivered, as well as descriptions of the professional task analysis activity, the team planning sessions, and the resource materials display. A summary of the workshop evaluation data is also presented.

PROGRAM

NATIONAL TEACHER EDUCATION WORKSHOP ON VOCATIONAL EDUCATION FOR SPECIAL NEEDS STUDENTS

TUESDAY, JANUARY 13, 1976

SESSION 1: PERSPECTIVES

9:00-11:30 a.m.

Introductions: Patricia Sitlington, Workshop Co-coordinator

Welcome: Myron Atkin, Dean, College of Education, University of Illinois

Presenters: Rupert N. Evans, The Vocational Education Perspective
Gary M. Clark, The Special Education Perspective
Elizabeth Marion, The Local Director's Perspective

Questions and Discussion

Lunch - 12:00-12:45 p.m.

SESSION 2: OBSERVATIONS

12:45-1:30 p.m.

Introduction: Rupert N. Evans

Speaker: John Guemple, Assistant Deputy Commissioner, Texas Education Agency

SESSION 3: PROFESSIONAL TASK ANALYSIS ACTIVITY

2:00-4:30 p.m.

Orientation: Workshop Staff

Small Groups A, B, C, D, and E

Social Hour (cash bar) - 5:30-6:30 p.m., Levis Faculty Center

Dinner - 6:30-7:30 p.m., Levis Faculty Center

SESSION 4: PROGRAM PRESENTATION I: *Professional Development Program for Vocational Education of Students with Special Needs*

7:30-9:00 p.m., Levis Faculty Center

Introduction: Allen Phelps, Workshop Co-coordinator

Presenter: Al M. Lampe, Department of Vocational Education and Technology, University of Vermont

WEDNESDAY, JANUARY 14, 1976

SESSION 5: PROGRAM PRESENTATION II: *Habilitation Personnel Training Project*

8:30-10:00 a.m.

Introduction: Betti Abbas, Workshop Co-coordinator

Presenters: Gary M. Clark
Patricia Sitlington
Alexander Wessitsh
Diane Wimmer
Department of Special Education, University of Kansas

All meetings will be held in the Illini Union, Room 314 unless otherwise noted.

SESSION 6: PROGRAM PRESENTATION III: *Project P.R.I.C.E. -- Programming the Retarded in Career Education*

10:15-11:45 a.m.

Introduction: Patricia Sitlington, Workshop Co-coordinator
Presenters: Donn Brolin
Don McKay
Lynda West
Department of Counseling and Personnel Services,
University of Missouri

Lunch - 12:00-12:45 p.m.

SESSION 7: LEGISLATION

12:45-1:30

Introduction: Rupert N. Evans
Presenter: Hon. Roman Pucinski, Alderman, City of Chicago

Break

SESSION 8: INSTITUTIONAL ACTION PLANNING

2:00-2:15

Orientation to the Action Planning Activity: Workshop Staff

2:15-5:00

Institutional Team Meetings

Dinner (on your own)

7:00 - ?

Institutional Team Meetings
(Assigned rooms for each team in Altgeld Hall.)

THURSDAY, JANUARY 15, 1976

8:30-9:30

Institutional Team Meetings (*Finalization of Action Plans*)

SESSION 9: *"Try Another Way"*

9:30-11:30 a.m.

Introduction: Gary M. Clark

Presenter: Marc W. Gold, University of Illinois

Reports/Reactions of each team

Workshop Evaluation

Travel reimbursement procedures

Note: We expect to close the workshop in time for participants to make flight departures any time after 12:15 p.m.

Presentations

The following pages contain the major presentations which were delivered during the workshop. The remarks of Drs. Evans and Clark and Elizabeth Marion provide three key perspectives, and address a number of issues that must be confronted by university and local educational agency leaders in developing effective personnel preparation programs. Dr. John Guemple provides a series of observations on the roles we all must play in the education of the handicapped. The Honorable Roman Pucinski, former U.S. Congressman and current member of the National Advisory Council on Vocational Education, offers his views from a legislative perspective on the challenges confronting vocational and special educators.

The final four presentations each describe an innovative program and/or approach to personnel preparation. Dr. Al Lampe describes the University of Vermont's approach entitled the Professional Development Program for Vocational Educators of Students with Special Needs. Dr. Clark and his staff at the University of Kansas describe a major preservice project designed to prepare personnel for secondary special education roles. Dr. Donn Brolin provides an overview of Project PRICE which is an inservice training program for personnel providing career education to the retarded. Finally, Dr. Marc Gold offers a stimulating description of his approach to training the severely and profoundly retarded in the performance of vocational tasks.

Everybody Talks About Heaven
But Nobody Does Anything About It

Rupert A. Evans
Professor of Vocational and Technical Education
University of Illinois at Urbana-Champaign

I want to take my theme today from the spiritual, Everybody Talks About Heaven Ain't A'goin' There and from Mark Twain, "Everybody Talks About the Weather But Nobody Does Anything About It." From my standpoint, "heaven is building teacher education programs which meet the needs of students."

The goals of this conference are built around an anomaly: vocational education teachers with no special education background are teaching special needs students and special education teachers with no background in vocational education are trying to prepare these same types of students for employment. This situation exists in the public schools because there are virtually no teacher education programs to prepare people with both types of skills. This workshop will do something about this situation.

Gary Clark and I have been asked to set the stage for the workshop. He will talk from a special education perspective and I will talk from the viewpoint of vocational education.

Vocational education has enrollments of an all-time high in secondary schools. Post-secondary enrollments are growing even more rapidly. Career education expansion in elementary schools and junior high schools provides high school vocational education programs with students who are aware of the need for career preparation and who have begun to explore their own talents and interests. General curriculum programs are being phased out of the high school. It should be the best of times for vocational education but there are some flies in the ointment.

Vocational education has inherited some of the problems as well as most of the students from the general curriculum. A decade ago, two-thirds of the high school dropouts came from the general curriculum. If the trend to phase out the general curriculum continues, these same types of students are likely to be dropping out of vocational education.

Twelve years ago, Congress began saying to vocational education that it had better do something about handicapped and disadvantaged students. In 1968 it said this louder, but said it to local education agencies and not to teacher education programs. Twenty-five percent of vocational education funds must be spent on programs which serve the handicapped and the disadvantaged but nobody said to vocational teacher education programs that they should change. Vocational teacher educators felt no need to change because we could place all our graduates in traditional programs.

But this is not all. With the exception of business education, every secondary school vocational education program has attracted a very high proportion of students who have reading problems and low academic achievement. Outside of agriculture education every secondary school vocational education program has attracted a very high proportion of students from lower class (working class) homes. These are the students in the traditional high school vocational education programs.

Add to this the students who used to be institutionalized or allowed to stay at home away from school, the students who used to die before adolescence, and the new recruits from the general curriculum. The upshot is that vocational teachers are asked to instruct students with a wider range of personal characteristics than ever before. And they are not prepared for it.

School superintendents had to do something. Consider a case study: In a school district not too far away, vocational educators were asked to take on a group of physically handicapped and educable mentally handicapped students they had not been serving. They refused on the ground that it would damage the 'image of vocational education.' But was that the real reason? A group of special educators agreed to teach these students, but they taught them skills which had no relationship to today's jobs. Gradually they became good vocational educators by trial and error, but they got little help from their nearby teacher educators. The vocational educators in that school district still don't know how to work with special needs students.

How could this happen? It has happened, in part, because we have not found ways in which two departments in universities can get together. The teaching of vocational competencies to special needs students requires skills from special education departments and vocational education departments.

There are many reasons why the necessary collaboration between these two departments has not occurred. One reason is geographic separation. The departments may be in different buildings, different colleges, even different universities. We have invited representatives of each of these situations here to see how you can solve some of these problems.

How will you tackle some other formidable problems? Joint appointments which handicap young, energetic staff members? Teacher certification or endorsement problems which lead to half-educated teachers--well prepared for a half of their job, but having no preparation at all for the other half of their duties? How will you do this when you don't have new monies? When new university programs can be instituted only if old ones are first killed?

How will you do it? We don't know, but we feel that we have the best ten candidates from the entire country to demonstrate how you can do it. Demonstrate first to yourselves, and then to dozens of other teacher education programs which will be looking to you for leadership.

The next few days of this workshop as you develop your plans and the next few months as you put them into effect are critical. We will be learning from you. Don't fail us.

PERSONNEL PREPARATION IN VOCATIONAL PROGRAMMING FOR THE HANDICAPPED:

A CHARGE TO SPECIAL EDUCATORS

Gary M. Clark
Professor of Special Education
University of Kansas

I begin this presentation with the realistic perspective, that if I really wanted to give a charge to special education teacher educators, I would use a 12-volt Die-Hard rather than a speech. I am not known for my electrifying delivery or for the use of any shock tactics in language, gestures, or dress, but I will try to deliver a charge that will make intellectual and professional connection, if not physical or emotional.

This workshop is a direct attempt to facilitate cooperative efforts in teacher education between vocational and special educators. In that spirit, what I have to say will be my way of sharing with you, my colleagues in special education, what I think are several basic, critical issues involved in your cooperative efforts. Moreover, I am saying them in the presence of your vocational education colleagues, so that they are aware of at least one special educator's view of our responsibilities.

The first critical issue is for special educators to acknowledge that vocational programming for the handicapped is not the same thing as prevocational programming for the handicapped. This acknowledgement should say to vocational educators, "We have some knowledge and expertise in prevocational skill training and limited low level occupational area training (food service, janitorial, maid service, etc.) but we are naive in the areas of specific vocational and technical education. Our goal of upgrading the occupational skills of handicapped youth cannot be met without the help of vocational and technical educators."

There are two important implications of special educators entering into a cooperative effort with vocational educators with an acknowledgement or statement such as this. First, it implies the critical need in special education to be as concerned about the adolescent and adult handicapped as it has the handicapped child. Personnel preparation for special education roles must take into account the differences between elementary and secondary education. Second, it implies the need for personnel who not only can provide prevocational training and/or certain occupational skill training programs, but also can serve as resource person for (or team members with) vocational and technical educators. This is a major shift from the kinds of preparation we have been involved in the past.

A second critical issue for special educators to address in planning a cooperative approach to personnel preparation is that the nature of our populations in high school special classes for the handicapped is changing. More severely handicapped students are being placed in such classes while the mildly handicapped, who have been in the majority, are being placed in alternative programs to special classes. Students remaining in special

classes at the high school level are the specific responsibility of special education and personnel preparation must adapt for the shifts in programming that may occur. The implication emerging from this issue is that while we have a supportive responsibility to vocational educators for those students in vocational education programs who have special needs, we have primary responsibility for handicapped students who are not in vocational programs, yet who have prevocational and vocational programming needs. Can (or should we) claim sole responsibility for this group without asking for support from our colleagues in vocational and technical education? We have underestimated the vocational potential of the mildly handicapped and we risk a repeat performance if we do not think in terms of vocational programming as well as prevocational programming. Marc Coffey has demonstrated the vocational potential of severely handicapped persons and challenged our expectation levels for all handicapped.

These two basic issues should be kept in mind as you develop or refine your teams' plans of action for personnel preparation. I am tempted to raise additional issues for you related to special education's responsibility in secondary career education programming and special education's responsibility in adult education and post-secondary programming because they are important, but I do not want to go beyond the basic focus of this workshop and raise issues which makes a difficult task even more difficult. Cooperative planning between educational disciplines is difficult, let us be honest.

There are innumerable obstacles which have prevented and continue to prevent cooperative efforts between special education and vocational and technical education. The state of the art paper reflects some of these. In 1973 at a regional conference on interagency cooperation between and among special education, vocational education, vocational rehabilitation, and developmental disabilities agencies at the state level, the following selected barriers to cooperation were acknowledged, which I think have relevance to higher education as well:

1. Minimal amounts of communication between or among groups concerning programming is common.
2. Narrow (sometime elitist) views held by the various agencies exist, suggesting that their respective agency has "the" answer(s).
3. Agencies function under different administrative departments.
4. State plans for various agencies are prepared in relative, if not virtual, isolation.
5. Conflicting philosophies exists.
6. A competitive interagency spirit exists, created by categorical aid whereby funding sources charge several different agencies with the same responsibility.
7. Shortages of staff and funds are realities.
8. A pre-occupation or over-concern with carrying out regulatory requirements prevails.

To make my charge specific, rather than general, let me present one for each of the basic issues and the notion that there are potential barriers to what you are here to accomplish. (See Figure 1.)

As special educators, you have something to offer in terms of knowledge of the needs and characteristics of handicapped youth. Vocational education needs you. You also need vocational education, as it has as much to offer you, as you have for it. The very term "vocational programming for the handicapped" makes no assumptions about where it takes place, who does it, or the current existence of any specific discipline or body of knowledge. It does assume that the program is specific or appropriate for the vocational needs of handicapped individuals. Our state of the art suggests that the two fields most concerned with these two factors must jointly work toward that kind of programming. It is already happening to a small degree but teacher education is overdue in involving itself to this end. I charge you and I charge all of us in special education to seize this opportunity. It is way too late!

FIGURE 1.

ISSUE

Vocational programming is not prevocational programming and, as such, is not the area of strength of the field of special education.

Prevocational and occupational training for the more severely handicapped remaining in special classes is the primary responsibility of special education, but we need the support of vocational education.

Innumerable potential barriers to cooperative personnel preparation planning exist.

THE CHARGE

Broaden the scope of responsibility of special education to insure that vocational education opportunities are provided at the highest level possible for secondary students. This implies both support role and advocate role training in personnel preparation.

Adapt current training models for preparing secondary special education personnel to the changing characteristics of students now being placed in such classes.

Draw on the resources of vocational and technical education in such personnel training model adaptations.

Experience what we advocate for the handicapped themselves--the dignity or risk--and enter into the cooperative venture with honesty and candor, beginning with communication centered on the needs of handicapped youth rather than hidden motives related to competition, reward systems, or professional status.

TEACHER EDUCATION:
A Major Component in Quality Special Needs Programs

Ms. Elizabeth C. Marion
Coordinator Vocational Education
for Special Needs Students
Essex County, (NJ) Schools

It has been our experience in the Essex County Vocational Schools, in the State of New Jersey that any conference that addresses itself to the issue of Teacher Education for the special Needs Student must of, necessity, by comprehensive in design.

Suggestions on Course Offerings must follow an interdisciplinary approach with input from Special Education, Vocational Education, Guidance and Counseling, Curriculum, Psychology, Rehabilitation and Supervision and Administration.

Potential enrollees should represent total school staffing and a special effort should be made to include middle management personnel since it is usually these people who will become responsible for the implementation of the program and, contribute to its success or failure.

And last, but not least, all discussion should zero in on National, State and Local Goals for Special Needs Programs, thus providing the necessary back-up data for further evaluation and future planning.

For several years now, especially since the passage of the '68 Amendments, Local Administrators have been faced with four persistent problems in the planning and implementation of any Special Needs Program. These problems have caused conflict and division between Educational Specialists in the Local District, created new vested interest groups in the Professional Associations and the Community, and caused much confusion about certification courses and procedures in the Institutions of Higher Education.

Identification of Students

The number one problem as we see it is the absence of uniformity in the identification of students to be served and certification requirements for professional staff to meet the need. Nowhere do we require a definition of terms as they relate to the purpose of Project Application and Program Implementation. Worse yet, where used, no effort is made to standardize the Program and coordinate its efforts with existing programs that have proven to be successful, e.g., a proposal can be written for a high School Program to include the services of a Resource Room for indepth instruction in Reading and Math. This is a very important consideration if we are going to grant a High School Diploma. Under New Jersey Guidelines, a Resource Room is a Special Education Term and must be staffed by a Special Education Teacher who must not handle any more than 5 students in any one period. This means we now have placed a limit on the number of students to be served in the total program since a single teacher can handle

only 15 students a morning and 15 students in the afternoon. (Our teachers work a 6 period day). Now do we go about fitting in the other two requirements of Science and History? By rights it should require a Special Education Teacher of History and one in Science. To be efficient, the Principal must also be able to assign those teachers to teach regular classes also, or, hire them as part of a team of Content Specialists in Special Education who will share facilities, materials and teaching assignments. There are few program proposals that spell all this out.

In checking out the issue with others who teach in a Resource Room Setting, I found some teachers handling anywhere from 3 to 19 students. Are we more concerned about making the numbers fit or quality service for those who can be successful in the program?

Since its inception, Special Education has always followed a special schedule, with reduced numbers in accordance with the type of classification served, in a self-contained classroom setting with major support services. My home town, Newark, New Jersey, has been a leader in the field with its School for the Deaf, Centers for the Mentally Retarded, including Trainables, and its State Commission for the Blind.

Our problems started when someone decided that mass education meant everyone in education fitting the same educational mold.

That was followed by laws that allowed schools to exclude students until referral procedures were set into motion and a student classification was affixed to his cumulative record.

Now, after several years of trial and error, new laws are demanding that all High School Teachers handle an indefinite number of students, in an open schedule design, and give us assurance that all will graduate. High School Teachers handle 25-35 in a class, and after years of working with the urban student, we consider the relationship between student success or failure and the teachers' contribution to that success or failure a privileged communication between the two, especially in the High School, where the student is treated as a young adult. Today this too is being reviewed. Such things as privileged communication have been bitterly attacked by forces of many different persuasions for as many different reasons. Is this what we're all about here?

I think not! I prefer to think of our purpose here today as being one of "Special Dimension." James Allen Jr., Assistant Commissioner of Education, DEW, in September '69, told us, "our responsibility for education in these turbulent times has a special dimension. Difficult though it be, we shall need to maintain a calm, judicial approach--to cultivate the objectivity necessary for the scrutiny and evaluation of proposed laws, policies and plans in terms of the proven values of past experience, as well as the pressing demands of the present and the future."

And so we see that the terms of the seventies are perhaps not the answer to what we are looking for but, it would be most dangerous to overlook the experience of the past in planning the world of the future.

I'm sure the services required will not be too different than what we are prepared to offer today. The difference will be found in the identification of the total number of students to be served and the instructional systems design within which these services can be offered.

Suggested Definition

Following this line of reasoning, I would like to suggest that we use the term Special Needs Student and define the term as all students in the Special Needs Category, Handicapped, Disadvantaged and the Gifted. This Special Needs Category will allow us to study the total systems approach, assist the Local District Administrator in program planning and contribute to the educational needs of the 1990's.

We should recognize that we are fast approaching the time when the Special Needs Student Population will outnumber the Regular School Population.

Senate Bill 6 recently signed into law for full funding in Fiscal '78 sets a limit of 12 percent on Handicapped to be served, (ages 3-21 yrs.). Former Commissioner Marland's conservative estimate on the Gifted sets a 5 percent limit there; and if the funding formula and our research is valid, we might assign a 17-18 percent to the Disadvantaged Population. Added up this gives us a 35 percent Special Needs Population as compared with a 65 percent Regular Student Population.

But when you continue to talk about hiring one teacher to handle 15-30 students a day as compared with one teacher to handle 150-175 a day, you are perpetuating the Special Education Image and this image is of an elementary nature.

This continued emphasis on increased staff and facility gives administrators little choice between forcing mainstreaming on the taxpayers or advocating the erection of more special schools where the Special Education student will continue in further isolation from his contemporaries.

We have now become involved in a major social issue for as the Special Education Student goes--so goes the Disadvantaged and the Gifted. Instead of taking advantage of the diversities found in the human resources of the Special Needs Student, we will continue to segregate him from the regular school population and thereby create a competitive educational system for 65 percent of our high school population.

I don't have to tell you the problems this approach would bring to a free society. We have already witnessed the public's reaction to this planning method.

Certification Requirements

Are we being realistic then to continue to certify our undergraduate secondary teachers in the specific areas of a particular handicapped classification? Wouldn't it be better to consider the role of the secondary school unit and recognize that to prepare any student for competitive living and gainful employment, he must be able to advance, within a given time frame, from a highly personalized instructional system to a departmentalized setting where

the completion of an educational task is dependent upon the comprehension of a set of instruction and the necessary resourcefulness to carry them out? Since classes must be departmentalized to insure the learning of basic skills in vocational education and the four basic disciplines, we should avoid the scheduling of students by classification and assist our teachers in becoming certificated in a teacher specialist role in a differentiated staffing design.

This is not to say that there will be no further need for the self-contained unit. But where High School Accreditation is the goal, we had better recognize that the public has become quite outspoken on the subject of high school graduates with less than a seventh grade reading level. How will we defend a High School Diploma for one whose academic potential is far less.

What I am suggesting is that all pre-service teacher education programs at the Secondary School Level concentrate on the development of Content Area Specialist with advanced certification as "Teacher of the Special Needs Student" - a graduate level or in-service training program open to educational personnel with a minimum of 5 years of successful high school teaching experience.

The climate is right for this approach. Individual differences have always been with us and up to now we have used such terms in our planning books as enrichment activities or supplemental work sheets to spell out the educational alternatives within the regular classroom setting. This worked as long as the numbers involved in the regular classroom were no more than one or two special needs students. Today we're concerned with some 10 or 11 special needs students in every class of 30.

What we need to do now is to take advantage of the educational climate and bring pressure to bear on all interested parties to search for a common ground on which to meet to discuss the possibility of a broad certification area that will facilitate the incorporation of all necessary educational alternatives into the regular high school curriculum. National and State Associations of Special Needs Personnel, State Department officials and the Teacher Education Institutions should assume the leadership in this.

Special Needs Specialization

With the unemployment rate among teachers continuing to escalate, we might find our efforts somewhat delinquent if we wait much longer. Unless a national effort is undertaken to insure that teachers in the Special Needs Field are **truly** the career teacher and not leftovers from the general employment market, we might find ourselves with a monster on our hands that we have all helped to create.

An interesting statement was made recently by a State Department Official from one of our more troubled States. The comment was: "Please, no more housing projects; not more trade-offs." I don't know how familiar you are with local politics, but those words made a lot of sense to me.

USOE Officials, State Department Directors, Leaders in Teacher Education and Leaders in the Professional Associations must all take their blinders off and get busy reading some of the many articles written for the lay public about the horrible injustices being inflicted on the school children of American--the most recent in the January issue of McCall's. This "learning disabilities"

thing has everyone involved whether for good or bad. We better stay close to the situation and be sure that when sides are drawn that we are on the side of the students entrusted to our care.

Your introductory courses in Teacher Education of the Special Needs Student must cover all these variables. Prospective leaders in the field must know all the options open to the educational planner. You must show them how each educational role in a differentiated staffing design complements the other and you must stress the importance of continuous articulation and coordination between the needs of the Local School District and the Teacher Education Institution.

Start your students early on a personal research file but alert them to the dangers of contingency management and its often attendant disregard for valid research.

Update their thinking on the latest in educational management systems and guide them in their search for resource materials.

Provide them with ample time to develop their own educational alternatives within the ongoing educational setting.

Without this broad overview the potential Special Needs Educator might be apt to believe that solutions can easily be found for all educational problems.

Our experience has taught us that solutions often defy all rational thinking and are the results of dogged determination and behind the scenes public relations.

Alternative Approaches

Can we provide sufficient educational alternatives to suit the tremendous need or will the limitations be set by Professional Leadership in the Teachers' Association, available facilities, staffing or Fiscal Resources? Will we be forced to simply regroup students along an ability grouping design or can we truly design a system that guarantees quality education for all students. This is the second problem which must be faced.

Margaret Mead, in the New York University Educational Quarterly-Spring '75 issue, states the major issue in educational planning today is, "To find the balance between asking enough but not too much from our schools will be one of the great tasks of the next decade."

Under an educational plan that follows a prescriptive teaching or an instructional systems design, the educational alternative we are speaking of would become part of the total resources available to all students to be scheduled as needed, and the emphasis would be on the improvement of regular school programs as a resource for the Special Needs Student.

Delivery Systems

This is where Special Education and Vocational Education can make a real contribution. Our teachers have maintained and rightfully so that it will do

no good to create a new instructional system for the Special Needs Student. The delivery systems of Vocational Education and Vocational Rehabilitation have been field tested and proven to be successful in training the student for gainful employment. What is needed is a stronger support system of special services with more carefully defined counseling roles, more flexible scheduling procedures for day to day adjustments and the mechanism through which all supportive agencies, both in and out of school, can be readily available and fully utilized.

Both Vocational Education and Vocational Rehabilitation share the common bond of tenacity when it comes to student holding power. It is only recently that Vocational Education has begun to tap the resources available to them under the Compensatory Education Act and Special Services Funding.

Today, the so called "Correlates of Achievement" have become a more significant factor in student success, especially for the urban student, than the educational setting in which the student is enrolled.

On the other hand, we have been criticized in Vocational Education as being too traditional in our approach to education. If a purposeful work attitude, socially acceptable behavior, attention to the task at hand and completion of the task with pride and accuracy is a traditional approach then we admit to it. We do know it has proven successful and many of our students return for upgrading in their chosen field or additional training in one of our many other vocational areas.

As Brunner tells us: "Education is a growth science," and we are in the business of education. We have never said our students are limited; others have.

Nevertheless, our goals are not always attained. Perhaps it is as Dean Griffiths of New York University writes in his article for the Educational Quarterly, Fall 1975, we are witnessing a "Collapse of Consensus"--the sense of national cohesiveness that provided values to which large majorities could subscribe is gone." He suggests "that the search for overriding national goals begin in earnest with a focus on the school....there should be convened a White House Conference on the problem of diversity in American Educational Goals."

Whatever approach we decide to support as our philosophy of Teacher Education, it is imperative that we keep in mind the many broad issues are still unsettled on the thinking of American Leadership. In no way can we divorce ourselves from the larger issues of the economy and unemployment if we are to be successful with the Special Needs population.

And so the World of Work should be continuously assessed and curriculum offerings should be adopted to meet the employment needs of the area in which your teachers are employed.

Curriculum Development

To match the above, curriculum development is a second area that should be studied in depth. Here your students must recognize that the textbook lecture approach is no longer popular with the high school student today.

And, while it is still the best basal approach to learning, the teacher today should be thoroughly familiar with the world of "Pupil Encounters" as described by Marcella Lantieri in her writings.

Take no chances that anyone enrolled in your program knows all there is to know about his or her particular field. Have them renew their thinking about the Exceptional Student, but be sure the instructor is familiar with high school rules and regulations and that the discussion centers on an ongoing high school setting.

The broader the experience you can give your students; the broader education he or she will bring to the Exceptional Student.

Now then is what we are suggesting any different than that which is already required for certification in Vocational Education or Special Education today?

To answer this we would have to introduce our third problem.

Educational Institutions and Out Reach Services

Problem number three is: Are we an educational institution or a training center? Is the one incompatible with the other? Is there danger of either of these systems taking over the entire field of Special Needs Education, thus posing a threat to the educational community or the community agencies involved in running the work adjustment centers or the Sheltered Workshops?

There is a very popular management technique sweeping across country nowadays. It's called "Conflict Resolution." The very term implies that all issues will involve conflict. We would have to agree that this issue is certainly clouded with the possibility of rather serious conflict. With so many people having devoted their life's work to these fields how could it be otherwise? Never in a thousand years could we in education match the dedication of such agencies as the Sheltered Workshop or the Jewish Vocational Services. America is well known for this side of its character.

And if you believe that either education or the outreach agencies will eventually run out of clients, then I advise you to check the police files on damaged children, drug and alcohol victims and the medical files on the mentally unstable. All these groups now have a public advocate in the State House.

Why not face up to the issue squarely rather than wait until the issue is beyond repair?

Isn't that what we are here for?

Coordination of Effort

The educational unit must coordinate its efforts with those of the various referral agencies and where necessary, students should be advised of the rights and privileges these agencies can provide for them.

We should not be in competition with one another. A course in Rehabilitation should be added to your certification requirements and assignments should include field experience at the outreach center and contact with some of the clients.

Maximum efforts should be made by all school systems to facilitate the utilization of these outreach services and school personnel should be continuously updated as to the most efficient use of such services. Hopefully, this would mean a procedure that would prove most beneficial to the student not the educational institution.

All school units have counselors, very few are actually trained in crises intervention. Even fewer know the fine line between a stable behavior and a breaking point. Parents look to us for help on this. How many have the time or the inclination to include this in their daily lesson plans. Yet it is one of the more significant factors in the maturational process. A career teacher who has a gut level reaction to the real problem behavior, is not always able to name the feeling, but is rarely wrong in his judgement. Shouldn't those of us in Special Needs be able to give that teacher support and offer some assistance to that student before he reaches his breaking point? A day away from school isn't all that bad. Many in business take a day off now and then. They call it a mental health day. At least here we would remain close to the student and his being out would not become a truancy problem.

One who develops a positive self concept does not always do it as a result of education. And in the adolescent environment, it's surprising that adults are accepted as well as we are, society has done such a good job of making that age group its own commander-in-chief.

Bring in someone who deals with teenagers everyday to teach a course on adolescence. Use the case study approach to illustrate the hopelessness of some of the student problems. Produce an objective procedure to bring assistance to the troubled youth rather than compassion and tender loving words. Education's job is to keep the student on keel so he can benefit from the instruction offered to him. There is nothing sacred about how long it takes. (Adult at 18 Laws might give us trouble, but the youngster has to take command of his own fate sooner or later, this just forces us to be more attentive to his earlier years.)

A kinship between all outreach services and the educational setting can prove extremely beneficial in the development of a self-assured young adult who can learn not to be afraid of adversity. All it takes sometimes is someone who cares.

For these youngsters education ends at 21; outreach services are life-long.

Problem number three also seeks answers to these questions.

Are we far enough along in educational research that the regular school system can absorb all the Special Needs Students?

Isn't ninth grade admission an invitation to complete high school?

If certification programs are the terminal objective then let's define the program as such.

With all the opportunities in Work Study, Cooperative Industrial Education and/or Job Training, we should not be fearful about the business community and its cooperation on placement.

If the training is good, the businessman will be most happy to place all your students.

But are we truly prepared to adjust our educational goals to suit the placement potential found in the student and the community?

Which brings us to one final question.

Need for In-Service Education

Can mainstreaming really work, is the fourth problem.

I would hate to say it can't. In fact we have had some successful placements in our shop and academic classes but, I must be realistic and tell you that a new building and all new staff members would have made the situation a lot easier.

Even with the new building and new staff I'm still going to have problems.

How I handle the problems and the spirit with which I approach these problems will depend to a great extent on what all of you do here.

If you give me workable guidelines, standardized approaches and support systems to file research and get feedback, then perhaps mainstreaming will work, even in my older buildings and with my career teachers.

To tell you the truth I'd rather work with my tenured faculty. They know their students.

As you can see my plea is for in-service programs.

Where some of the courses can be offered on campus and some off campus at the local schools, this proves helpful to conserve teacher energies and get an entire school system involved.

If certification courses can be offered by the colleges, and in-service programs can be offered at the local level to supplement these, this is even better.

Tuition Waiver has been a strong incentive for our teachers and college credits for advancement on the salary guide has been another plus in our system.

We are now working on graduate degrees in Vocational Leadership for some of our Special Education Personnel who took the Special Needs Courses.

It takes all ways and lots of time, patience and phone calls.

It would be a big help if we didn't have to go through the same process again and again to keep the programs open to the Local School Districts.

All I know is that we're all in this together and it's good to see so many interested enough to do the heavy work to get us moving.

Thanks for listening; I hope it was worth your while.

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OBSERVATIONS

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INTRODUCTION

I have been wondering for two months why Rupert Evans invited me to make this presentation today. After some research, it's become evident that he didn't know who else to ask. Many of my questions remain unanswered. Perhaps you can help research answers.

First of all, I'd like to say a few words about my interest in the subject. I grew up in the Kansas City Public School System; that is to say, at least my secondary education. Elementary school was divided between the Kansas City School System and the school system of Gary, Indiana, where my family spent most of the depression. My first awareness that all was not right with the world was when my family moved into a house in the middle of the block of five houses, and I discovered that in one of the corner houses of the block was a mentally retarded 14 year-old boy who was living with an aunt. I frankly didn't think much about it and only saw that boy once or twice in the four years we resided in that location. Question: How many children who are handicapped are protected or hidden in back rooms or walled yards? Years passed, and I had the occasion to counsel with a family in the rural community who were raising a mongoloid boy. They were his grandparents. Question: Do all parents of handicapped children reject the child? More years passed, and I was asked to serve on a local advisory board for a sheltered workshop in Baytown, Texas, where I was an administrator in the community college. Question: Is this the only kind of work and/or work place where the handicapped can find employment?

My wife and I have no children, but she has been a music teacher in public school systems in three states over a period of more than 25 years and is currently the director of a community center in a disadvantaged neighborhood in Austin, Texas, as a full-time volunteer. We have, in that period, worked closely with young people and followed their development with interest and watched their children grow and mature. Question: Can anyone with a professional career spanning a quarter of a century remain untouched by children who are handicapped?

THE PROFESSION

Let us assume for a moment in speaking of the professional in education that all teachers and administrators have a basic commitment to the people they serve. That is, the student or the learner. This basic commitment works itself out in various ways. Most frequently some kind of "dynamic tension" between the teacher and individual students which draws the learner in the direction of achievement. I have seen teachers who felt inadequate who were driven back to higher education for more training without really knowing that the force that drive them was this deep sense of commitment. I know of other teachers

who follow impossible schedules, staying up until all hours of the night to prepare or rising early. One specific secondary teacher I know of in Austin, Texas, has developed the habit of arising at 4 a.m. in order to spend a good three hours preparing for that day's instruction. She frequently is up until midnight grading papers and reading in her subject matter. Questions: Can a way be found for measuring this deep sense of personal commitment? Is it learned (taught) or developed after the teacher enters the profession?

I have discovered that there are secondary commitments quite as important as the primary commitment described above. For example, for many years vocational educators have been deeply committed to the employability of their students and have worked more and more closely with employers and groups of employers. Question: Aren't the aspirations of the parents and child just as important as the employer's? On the other hand, I find the secondary commitment of special educators is to work with parents or guardians and with a multitude of groups: doctors, psychologists, and others who concern themselves with the physical, mental, or emotional conditions of the children the special education teacher is teaching. Question. How are the employers ever to know what the handicapped can do if those who are best prepared to answer their questions concerning the ability of these students do not work closely with them? In effect, all the publicity on "hire the handicapped" that will ever appear in a community on all the media is less effective than one conference between employer and a teacher of special education about the ability of a single child.

In the summer of 1969 an experimental program was conducted at the Texas School for the Blind. The program was initiated in distributive education. Now for you non-vocational people, that means marketing or wholesale and retail sales and services. There had never been a program like this for blind children. Had a poll been taken, 99 percent of the teachers of distributive education would have said that because of the nature of the jobs which distributive education students normally hold the blind students would be unable to compete in the labor market. In the experimental project it was found that some of the employers were surprised with the ability of the students to deal with the work and the work environment. We were able to place all of the students, during the project, in paid employment work stations; and some of the students were offered permanent positions at the conclusion of the summer. A documentary film was developed. Perhaps some of you have seen it. It's called "The Blind Can Do." I find it difficult to capture the sense of excitement and professional fulfillment which everyone connected with the project felt. Perhaps a poem best captures it.

The Gift

by John R. Guemple

Midnight child
Engulfed in darkness
Dependent on other senses

Radiant spirit
Dispelling bleakness
With unforgettable smile

Reaching out to brighten
Others with a light
Darkness cannot see

Surely the vision
Of a blind child
Sees me differently than others see

Only once we met
Gentle touch of
Fingers on face

Through years the
Shy tender reaching out
To know me
Remembered

In intimate event
My total experience
Changed
Suddenly
Indelibly

Every blind child
Reaches out to me
No longer strange
But unique

Children strangely flawed
Endowed by God
With the Gift
To touch others

Question: Aren't there discoverable and developable talents and potential in most of the handicapped?

THE STUDENT

Who are the persons we serve? There seems to be some disagreement. Most teachers would say the students. Administrators might say the taxpayers. I get the distinct impression that people at the State Department of Education level would vote for the former. Without students we would have no profession in teaching. On the other hand, the college professor with his great depth of knowledge of the literature, history, philosophy of education would be tempted to say that we serve society, or at least its need to prepare the young to find a place in that society. And here I'll have to admit that I find some basis for disagreement and agreement with all of the above.

I grew up during the depression, a period in our nation's history when no one had much; and, while we might have been self-conscious about it, we were not particularly ashamed. There was a great sense of community. I know a small town in Missouri where a friend of mine grew up. He was one of six children, and his mother was a widow. Regularly he went to the barber shop for the no

longer existent 25-cent haircut. He tells me he always handed the barber a quarter. The barber always rang it up and handed him back two dimes and a nickel in change. His mother couldn't afford shoes for the children, but the shoe store always fitted them. Somebody or some group, or perhaps a community, felt an obligation to the children of families who obviously couldn't afford the things everyone else had. Question: Was this deep sense of community and commitment to the young vanished? The one thing I recall most dramatically of my childhood was that children were expected to be different from each other. Each one had talents, abilities. The only things we had in common were our humanity, our fallibility, and our ability to be hurt.

THE FAMILY

Part of the community which every teacher, every school administrator, every teacher educator should be more aware of is the family. In my introduction I raised the question do all parents of handicapped children reject the child? I'd have to say the answer to that probably is no, not all. But when they don't something else happens.

My wife's first year of teaching in Austin was really quite different for her. Most of her professional career had been spent at the junior high and high school levels. She did spend three years on the faculty in the School of Music at Baylor University. When we moved to Austin she taught in the elementary school. My wife had twenty years experience as a music teacher, and most of the other teachers in the elementary school where she taught were relatively new. One special friend teaching her first year right out of college was Kay. Her husband was a law student. Kay and my wife were attracted to each other because of their mutual love and concern for the children, most of whom came from disadvantaged homes. They taught together three years, and then Kay left the school system to have her first child. We all celebrated together when Julie was born. But Julie was a hydrocephalic child. She lived four days less than a year. Kay has since had another baby, perfectly normal; but some irreparable harm was done to her marriage. Her husband, who loved little Julie, was never able to accept the inevitability of her death. Both parents were isolated, not only from each other, but from everyone else.

Alone

by John R. Guemple

Have you ever been really alone

Alone in
Anger
Pain
Emotional turmoil

Alone in
Hunger
Isolation
Sexual need

Surrounded by a forest of strangers
Looming over you in the dim
twilight of diminished hopes
Silent screams for understanding
help
love
Torn from a mute throat

Here
take my hand
If we are together
neither of us will be
Alone.

Question: How can we broaden the understanding, concern, and commitment of vocational educators to include the families of handicapped children? They have aspirations for their children, more limited than the parents of normal children, but no less real. In fact, because of the nature of the handicapped child's traumatic environment which often is a broken home or a home with guardians rather than parents, these aspirations are sometimes even more dramatic emotionally than they are intellectually. Can we develop a new community with a sense of commitment to the young - a community peopled by teachers, special education teachers, teachers of all academic subject matter? Question: Can we learn to teach this sense of responsibility and commitment to the community's children? What will happen if we cannot? With the leadership displayed and the ingenuity of the higher education system whose mastery is unequalled in the world today, I feel that we must rise to this challenge.

CONCLUSION

You, the participants in this workshop, are mostly teacher educators. If the professional community in special education and in vocational education are to begin resolving some of the issues, some of the problems, some of the questions I have raised, how do you start? First of all, I think this workshop is exciting. Many of us are handicapped. We talk to each other but only if we have a common meeting ground. Social scientists talk to each other. Mathematicians, English teachers all talk to each other. It is a relatively rare occasion when people from two different subject matters or thrusts in education get together. It would be more important if this meeting were taking place in your state with representatives of all of the interested teacher education institutions training teachers for the schools you serve. If you do have such a meeting please include people from the State Department of Education and perhaps some of the school districts. You see, one of the main functions the State Department of Education performs is to identify needs and to raise to the level of awareness among local school district personnel issues, concerns, and priorities and then to assist them in developing programs. The State Department personnel often go to the legislature with all of these kind of data in a package to see if the legislature won't fund experimental programs or projects or even a state-wide program. Even if they don't go to the legislature, current legislation at the national level funnels certain monies to each state for the handicapped. I don't claim to have knowledge about all of the states, but at least in Texas there are times when there are funds remaining unencumbered which could very readily be made available for new approaches in training vocational teachers for the handicapped. Let me give you an example. Some years

ago now, the State Legislature provided funds for two new classifications of personnel in local schools: vocational guidance counselors and vocational supervisors. The State Department of Education took federal funds which had provided for a very limited number of these personnel to encourage preparation programs because these positions were now fundable with state money. Some emergency kinds of courses were devised and taught under contract with various institutions. One of the main actors in this scenario was Texas A & M University. If you wish to ask them, they're here in this workshop. Perhaps they can tell you how well or how poorly this arrangement worked. The big results, however, was that after this thrust ended, funds ceased to be set aside for these programs, contracts no longer negotiated, there remained in the teacher training institutions preparation programs and an institutional commitment to a training responsibility. Question: Can we help the handicapped? Who are we trying to help anyway? Perhaps the real answer is that we can only help children if we prepare people who can deal with them one at a time on a one to one basis. To me, that means the teacher.

One

by John R. Guemple

One child
One narrow hall of time
One confined mind
One channel
One failure or

Success

One life to live
One death to die
One set of experiences
One decision at a time

One you

One pain or many
One crushing failure
One exalting success
One life lived alone

Uniquely

The Response of Congress to the
Vocational Education of Special Needs Students

Roman Pucinski
Alderman, City of Chicago
former U.S. Congressman

I feel somewhat as an intruder whenever I address a distinguished group of educators as those of you in this room. I guess the only reason for my being here today is that it was my great privilege for 14 years to sit with the education committee of Congress and to be the chairman of the subcommittees that dealt with the general educational problems, including the 1968 Amendments. If you are wondering why I am not in Congress today, that is because "a funny thing happened to me on the way to the Senate."

I would like to share with you in this very important conference some of the thinking that goes on in Congress. The Civil Rights Act prohibits discrimination against the handicapped and this gives the educational community, and society in general, a great responsibility. Not only does this act prohibit discrimination but actually requires an affirmative action program of employers to show they are doing something productive and positive to open up new opportunities for the handicapped. We also are realizing more and more that we, as a society, just cannot afford to make the handicapped public wards any longer. For the most part, we are learning as we have for some time now, that the handicapped are a significant resource. The old concept of writing them off has given way to realities. I am continually impressed with the kind of work special educators are able to teach to human beings who for many years were written off as a total loss to society. The Congress has been and will be even more responsive to this problem as they see more and more workshops such as this one.

Congress has taken some positive steps in the direction of vocational education and the handicapped. The 1968 Amendments of the Vocational Education Act are among the many acts dealing with vocational education and the handicapped. However, the disadvantaged of the country are being shortchanged in vocational education. In my own city, Chicago, we were spending less than 1% of the vocational education monies on the disadvantaged. The Vocational Education Amendments (1968) mandated 15% set aside monies. At least 15% of the federal funding coming into a community must be spent on the disadvantaged. You can talk all you want about the major breakthrough in the education of the handicapped, but if the funds are not being earmarked for that aspect of vocational education you will not achieve success. A most recent study stated that in our nation's sheltered workshops 53% are mentally retarded, 19% are mentally ill, 10% are blind, 5% have some form of orthopedic disability and 13% suffer other problems. You see that one of the greatest challenges of special education in working with vocational education is in the field of the mentally retarded. I am particularly pleased to be here today and

especially to be able to correlate the relationship between special education and vocational education. There ought to be a happy meeting between special education and vocational education. One out of three Americans has some form of emotional deficiency, (to a greater or lesser extent). You are talking about 70 million human beings in the U.S. that need some form of assistance. I hope that these statistics can impress upon you the enormous responsibility that rests on your shoulders.

Congress also passed a number of other bills that are made available to sponsor more meaningful programs of both special and vocational education. We passed the Vocational Rehabilitation Act; we passed Indian Education Acts with special funds earmarked for such programs. We also have another very special problem that will offer you a great challenge; we have legislation and funds available for vocational education in prisons. Obviously, there is an enormous challenge for the vocational education people and special education people to work together in four million programs.

We sometimes overlook the fact that special education does not deal only with those who have educational deficiencies. We also passed legislation that has helped children with learning disabilities. We recognized that this group was getting lost in the shuffle. If there is any strength in federal involvement in these programs it is only because the Federal government is trying to address itself to the special needs that too often get lost in the shuffle. I often hear my friends say that the Federal government is too involved in education. They also criticize categorical spending. But if we hadn't put the special definition on the special needs, these needs would have continued to grow unnoticed and uncolored as they had for years. That is why the Congress, the committees, the people like yourselves had to become involved.

We did something very important in the 1968 Amendments that you ought to be familiar with. We established an excellent national advisory council on vocational education. It is my privilege to be a member of this council. We also required every state that wants to participate in federal funds to establish a state advisory council. In order to meet the educational needs of each state there is a mandate and a specific requirement that the state advisory council must participate in the entire planning process of vocational education programs. This gives the state advisory council something more than ceremonial status. Before a state can qualify for any federal funds, it must submit an annual plan of how it intends to use the Federal assistance in the vocational education program. We provided in the legislation that the state advisory council must certify the plan and participate in its formation during the entire planning process. Why did we do that? Because we recognized that for many years vocational education had failed to meet the needs of the community.

The new vocational education bill pending in the Senate requires the national advisory council and state advisory councils to have people in special education serving on their councils. This bill recognizes that special education has become an integral part of vocational education. In many instances, these two are inseparable and ought to be working together. In developing the plan in the respective states and respective communities you ought to utilize the state advisory council. I heard someone ask at the conclusion of the morning session if something positive will be drawn from this workshop. The one positive thing to be drawn from this workshop is that you as special educators and vocational educators will familiarize yourselves with your state advisory council, ask for membership on that council, and then fully participate in developing the state plan. The state advisory council becomes a key resource in helping you move forward to some of the things we are talking about this morning.

Congress is putting great emphasis on career education. There is a great deal of misunderstanding in this country between career education and vocational education. In some places there is hostility between the two. Vocational educators seem to feel threatened by the career educators. We established a whole concept of career education because we recognized a manner in which Americans chose their occupations. We recognized the fact that many Americans are totally oblivious of the world of work. We recognized the fact that sooner or later everyone has to join the world of work. So career education was established as a kind of front-runner through vocational education. Career education, the exploration process, compliments vocational education. It makes people familiar and acquainted with the requirements of selecting certain skills and nowhere will this be more important than in the whole spectrum of special education. The career counselors must recognize the needs of people and tie into the various programs available. Carl Perkins now has a bill pending (which I think has a pretty good chance of passing) which will make \$100,000,000 available the first year for developing career education programs. Paralleling that development ought to be special education people, because certainly the handicapped ought to have full equality for career development.

The average American, handicapped and otherwise, changes job skills from five to nine times during a lifetime. I will bet that all of you in this room will be doing something different in five years. It may be in the same discipline, but it is going to be something different. So career education is a very essential element of the total educational spectrum. Vocational education becomes a delivery system, and I can't think of anything more tragic than to set up a great career education program, whetting the appetites of millions of Americans, telling them that they can do this or they can do that, and then not having a delivery system that will teach them the skills to qualify for these jobs. We look upon vocational education at the elementary and secondary level as a delivery system to back up career education. The third filler becomes post-secondary--the community college as well as the four year and six year colleges. The fourth filler becomes adult education. We haven't talked about it very much up to now,

but you are going to see the greatest opportunities open up for special education as vocational education moves in greater numbers into adult education. There is need for retraining American citizens for the emerging employment roles. We expect to generate 10,000 new, additional job skills in the next decade. And so you can see the challenge as you look at the broad picture: career education installation, vocational education delivery system, post-secondary education for those willing to earn higher degrees, and finally adult education for the handicapped. When you see that picture, you see the enormous challenge that lies ahead for you in this room.

We were very disturbed, as you must have been, at the Grenliek and Associates Report. It will demand of Congress a more realistic approach to the whole structure of vocational education, special education, and career education. This report showed that from the sheltered workshop, only one out of every ten handicapped persons is finding employment. Now that is a very bad track record which is going to cause concern in Congress, in the state legislatures, and also in the educational community. Congress is willing to appropriate the money for the nation facing a 40, 50, 60 billion dollar deficit every year. I hope those of you participating in this conference will address yourselves to the growing pressures from Congress to spend this money wisely. We are going to have a lot of pressure from Congress to take the money that we have been spending on sheltered workshops and try to defuse this money in the total community. It would seem to me that if this report is correct (and let us assume that it is, it was carried out under good testing procedures) that one solution for dealing with the problems of the handicapped in vocational education is a greater integration of the handicapped in the general school program. It is going to be difficult. It is going to require a lot of work. It is going to require a lot of teachers, a lot of counseling, but it seems to me that if only one out of every ten handicapped persons is finding employment after their exposure to sheltered workshops, something is dramatically wrong and requires massive change.

We are also suggesting new training programs for work in other areas. There seems to be a tendency to look upon the handicapped as having limited abilities. But those in special education are finding out that this is not very true. In many other countries also they are finding out that it is not true. New opportunities are opening up for the handicapped where they never worked before. They are finally being successful in American communities. Training for handicapped in service industries is being provided. Significant inroads are being made for the handicapped and emotionally disturbed.

Many people are responding with great surprise that the handicapped are able to adjust and work properly. What we have to do, obviously, is overcome the suspicions of employers. The affirmative action program is now being enforced by equal employment opportunity committees in greater numbers. The handicapped feel they have greater resources to offer in the

world of work than they have been given a chance to provide. With new emphasis on the affirmative action programs, you are going to find more and more demands for your services. The Department of Labor, incidentally, certified 2,766 sheltered workshops in America covering some 410,000 clients. I mention this figure only to illustrate the enormity of the problem. We estimate now that about 40% of the school population has some form of handicap, lesser or greater, and the sheltered workshop has tried to address itself to these problems, but I think that you can do a better job in the schools.

The Grenlick and Associates Report was rather interesting. I would like to read this paragraph for your consideration.

In preparing handicapped people for jobs, it cannot be said that a workshop can obtain a high degree of success. The assumption behind the rehabilitation effort is that all or most handicapped persons are placable on jobs. The way to accomplish their placement is vocational rehabilitation. In fact, however, the ability to team a job with a person is not merely dependent upon a person's job skills. It is also dependent upon the community, total integration of the handicapped in a society of contributing citizens, and not isolation.

This is where I believe the report makes the greatest contribution. This is why I believe special educators can play a key role in working with vocational educators. We can show that the handicapped can be employed. This pessimistic report should not obscure the real challenge. Congress, of course, will want to re-examine the present legislation, but I do not see any good reasons for more funds diverted for the Education Basic Development Act. For indeed, if this report is shown as correct we may be developing more teachers in special education by absorbing the handicapped into our general educational system. This would also mean a greater number of counselors. We are talking about the possibility of parents, paraprofessional counselors, to help the degreed counselors in their work, simply because we cannot crank out enough counselors fast enough to meet the needs.

I also see more funds for curriculum development for the handicapped. It seems that this is an area you ought to be talking about with the state advisory council because in the 1968 Amendments specific categorical set asides were mandated for both research and curriculum development, and those of you in special education ought to get a part of the action. You can get a piece of that action by working through the state advisory council.

I don't see any general compromising in Congress on the whole question of Civil Rights Prohibition against discrimination because one is handicapped. I think that the roots of the civil rights concept in Congress are so well founded and deep seated now, that I don't see any reason, and properly so, for the repeal of the standards and the high hopes that we

voted into law in the 1960s just because we say that we can't meet those standards. We can meet them. They can be met with the proper approach.

This challenge becomes even more compounded when you consider the fact that this nation is going to a full employment economy by 1980. I am not talking about some pie in the sky a decade or two or three from now. I am talking about the next 48 months. I know that we are concerned about the present economic situation. If you look at the economic profile of America, you will find that the last 100 years have been a series of hills and valleys. Sometimes the valleys are a little deeper than we want them. Sometimes the hills get a little higher than we want them. Let me remind you that the decade of the '60s was one full decade of uninterpreted economic growth. We had an unemployment rate of 2.3%. During that period of growth we faced enormous problems of manpower and womenpower shortages all over the country for which we were totally unprepared. Employers raided each other, stealing each other's workers because of the tremendous shortage of skilled help.

By 1985 this nation must train 58,000,000 new workers as the labor force increases to the trillion dollar economy. We are going to go from 85,000,000 now to 102,000,000 by 1985. Of that 58,000,000 we are going to have to train 17,000,000 workers to expand the normal growth of the economy. We are going to have to train 41,000,000 to replace people who die, retire, or leave the labor force for all sorts of reasons. As you see these enormous needs in the labor force you can see a clear picture of how special education and vocational education will have to be in the mainstream. You are going to have to educate the community and provide the manpower to fill the enormous needs of American industry. If the present drop in the birth rate continues as we suspect, the United States won't be able to discriminate against the handicapped. We will need them to meet the demands of 102,000,000 in the labor force.

I don't suppose that we will want to talk about education for women as a special education concept, but certainly it does cause a problem because as our whole population changes, women emerge as a valid force in the American work market. Our population in 1970 was 51% women and 49% men. We anticipate that by 1980 it will be 53% women, 47% men. By 1990 we predict it will be 55% women, 45% men. It is a fact that there are going to be more women than men in this country. Industry is going to have to attract women to the world of work at an earlier age. As a matter of fact, this is happening already. Women are already responding to the needs of industry. The age of childbearing is going up. Young women who ordinarily would have children at age 24 to 30 are now in industry and having their children at age 32 to 34.

Obviously, a great challenge in American education will be to train women for the dual role of breadwinner and homemaker, both of which are becoming more complex. A committee in Congress studied what it would cost to buy the services of a modern housewife and mother of two at the open

market. We concluded at that time, that it would cost \$15,700.00. We did not try to put a price on personal services. It shows that the work of a homemaker is becoming more skillful, more complicated. Home economists are going to have to develop programs which will prepare individuals for this dual role. It is true that the male member of the family is developing a new sensitivity. I think that schools are going to be teaching young men how to make their contributions to the household because obviously this generation has a greater sensitivity for the family structure than previous generations. One interesting clue to changing attitudes is the Department of Labor in Washington where male members have negotiated contracts for paternity leave when their wives are in the hospital. If they don't have vacation time coming they can take thirty days without pay. The idea is to have the male member of the family in the home instead of some neighbor, friend, youngster, or someone else taking care of the household. The point I am making here is that special education cannot ignore training this nation's women for the world of work.

It becomes clear that Congress will have to revise some of its thinking about legislation to meet these special needs. Congress cannot ignore the recent conference in Washington on special education needs of the handicapped. It was a good conference made up of people who are working on somewhat the same things you are.

I got a job for a young man with a radio station for the Chicago Board of Education. Not that I generally interfere with the Board of Education, but this man needed help. Many places would not hire him, simply because he was blind. Today he is a key anchorman as a radio announcer conducting interviews. The young man shows a fantastic understanding into the problems of our community. The only difference that should exist between the goals of vocational education for the handicapped and the non-handicapped is a necessary assumption that the handicapped take longer and require more effort to accomplish tasks. This is why the special education program and special educators must provide the guidance, leadership, understanding, skill, and know how. It is going to take longer and yes, it is going to be more expensive. I get very disturbed when people tell me that vocational education is expensive. Of course it is expensive, but look at the track record. We made a study a few years ago and found that those who had experience in vocational education do go on to college. They have survived the full course because of the discipline they are taught in vocational education. We must bring about a way that special education can bring in their skills for vocational education for the handicapped. Then I think we will have a recipe for success.

The cost of education is high but costs are a lot higher if you dump that human being as a public ward for the rest of his or her life. We must acknowledge that it is going to take a little longer to educate the handicapped. To do this we must educate and discipline the American educational community. We are talking about teaching handicapped persons adaptability skills more than specific job skills. We must be able to

accept the fact that a handicapped person can indeed be trained to do most of the things that those of us who are more able-bodied can. I would hope that the vocational educators and special educators here would zero in on specific skills that the handicapped need to be taught. Many vocational education teachers whose main background preparation is work experience rather than university training seem to have trouble knowing how to handle handicapped children's problems. We know that the training of individuals is a constant thing. You cannot take human beings, give them a screwdriver, a few lessons on how to set a screw, and have them work on it. The restructuring of human beings requires the kind of skill that many of you in this room have. It is a long, costly, tedious process.

Vocational education and special education play a particularly significant role. I think you can develop a meaningful program because of your professional background of evaluation. The Senate is more likely to support vocational education for the emotionally disturbed than other handicapped. That is a challenge when you consider the fact that 53% of the 410,000 in the 2,700 sheltered workshops in this country are there because of emotional problems. That is the biggest problem and yet perhaps the toughest one. The success of your program is measured by the success for the handicapped.

Labor unions are more receptive to membership of handicapped persons when they realize that these persons are likely to be hard working, stable, dues paying members. Handicapped workers are among the last to be fired when jobs are reduced. However, this may be due in large part because they can be exploited. Your programs ought to be giving these people some idea of their rights. Regular school counselors often don't complain. Many of the school counselors don't want to work with handicapped students perhaps because they don't have experience. One of the greatest challenges that will come out of a conference like this is recognizing the need to equip counselors with special skills for both the handicapped student and vocational training. If I had my way about it, I would put a great deal of my money in counseling and guidance. Today this is perhaps the single greatest shortcoming of the American educational system at all grade levels. Finally, there is a great need for psychological specialists and therapists who work with the handicapped to learn the basic concepts of vocational education. You can see there is a great deal of interest in this whole field.

I would like to close with this request. I would like for each of you, first of all, to know who are your state advisory council members. We created the state advisory council as a delivery system, a place for you to go and talk about the needs of your community. I can assure you that if you will put together your ideas and present them personally to the state advisory council you will see some magnificent, meaningful breakthroughs in this very important field of American education. In the 14 years that I was in Congress, I learned a profound respect for the American people. I am not one who goes around saying we have a bad educational system. When you consider the problems, this educational system has done pretty well. This country is the youngest major power in the

world today. This nation, less than 200 years old, has become the fore-runner in the forefront of human achievement. I think all of this came through our educational system. So this is no time to bury the system. As we see the needs of American there is time to build on that system.

This conference is important. Over the years I learned that nobody in our society has a more awesome responsibility than the American teacher. You see when a doctor makes a mistake, he buries it. Who knows the difference? When a lawyer makes a mistake, he appeals it. When a teacher makes a mistake the scars follow that student. It is an awesome, frightening job. That is why I am pleased that you are here. I hope that out of this conference will come a new program bringing the talents of vocational education and special education to every American handicapped, disadvantaged, black or white, young or old, male or female, so that every individual will be able to graduate from school with a marketable skill and face the world. One of the great tragedies of our time and the reason for a lot of turmoil is because we have graduated young people without a job skill. That is why I feel so strongly about vocational education. I wish you luck and congratulate you for putting together this conference.

A COOPERATIVE PROFESSIONAL DEVELOPMENT PROGRAM FOR
PREPARING VOCATIONAL EDUCATION PERSONNEL TO
WORK WITH SPECIAL NEEDS STUDENTS

Dr. Al Lampe, Assistant Professor
Department of Vocational Education and Technology
College of Agriculture
The University of Vermont

"Thank you very much, Allen. It is a real pleasure to be here tonight and to have this opportunity to talk about some of the things we've been doing at the University of Vermont in the way of preparing vocational educators to work with special needs students. You certainly have brought together an impressive assembly of teacher educators from across the nation for this workshop, and I know that I am speaking for every member of our Vermont team when I say we're all grateful to Rupert Evans and Gary Clark, Co-directors of this conference, for making it possible for us to be here to share in this exciting exchange of ideas and information. I like workshops that accomplish something, and from what we've seen so far today, I'd say that a great deal will be accomplished during this one.

Before getting into my topic for tonight, I'd like to acknowledge that I can appreciate how all of you must be feeling at this point. We've been at it now for about eleven hours, and although it has been an exciting day, the prospect of sitting here and listening to a long presentation isn't particularly inviting. It was Mark Twain, I believe, who said "being talked to death is a terrible way to go." I'd like to set your minds at ease by assuring you that Rupert Evans didn't invite me out here to Illinois to be an executioner! So, if you can all just sit back and relax for a few more minutes over that last cup of coffee, I'll do my best to keep this presentation as short as possible.

When Allen Phelps called me on the telephone a few months ago and invited me to make this presentation, I must admit that I felt rather hesitant about accepting. Having been at the University of Vermont for only a short period of time, I felt somewhat less than qualified to be speaking about the program I am representing here tonight. There are several persons participating in this workshop; persons who are sitting right here in this room tonight; who deserve most of the credit for developing the special needs teacher training model I'll be attempting to describe to you. Let me stop here for just a moment to introduce these people to you.

First, the person who was most closely associated with the Vermont program during its early stages of development, and its original coordinator, Mr. Marc Hull. Marc, who can boast being a "native Vermonter," left the university just over a year ago, and is now completing his doctorate at Texas A & M, where he also serves as a Research Associate in the Office of the Dean.

Another former Vermont resident, Dr. William Halloran, is here representing the Bureau for the Education of the Handicapped, U.S. Office of Education.

Before accepting his new assignment in Washington, Bill served as a Consultant with the Division of Special Education and Pupil Personnel Services in the Vermont State Education Department. While in that position Bill had full responsibility for liaison between the State Education Department and the program at the University of Vermont, and was instrumental in securing the necessary financial support to continue the Vermont program beyond its initial three-year planning phase. Bill also played an important leadership role in developing THE VERMONT GUIDE FOR TEACHING ADOLESCENTS WITH SPECIAL NEEDS, which you received a copy of just a few minutes ago. We'll be talking some more about that publication a little later or in tonight's presentation.

The final person I'd like to introduce to you is Chris Morgan, who recently replaced Bill Halloran as our Special Needs Consultant in the State Education Department. Chris was one of the first Diversified Occupations teachers in Vermont to work with the handicapped in vocational education, and has been involved from the very beginning in the development of our present program for delivering vocational education to special needs students. Chris also serves as an adjunct member of our faculty in the Department of Vocational Education and Technology, and has been very actively involved in our professional development program for special needs personnel.

Perhaps now you are in a better position to understand my original comment about being somewhat reluctant to stand up here tonight and talk to you about the University of Vermont program. With Marc Hull, Bill Halloran and Chris Morgan sitting right there at that table, I feel a bit like the fellow who found himself trying to impress Noah with his story about the Johnstown flood! Aside from that, however, I really am pleased to be here tonight, and I hope that what I have to say will convey an accurate picture of what we're trying to do at the University of Vermont in the way of preparing vocational educators to serve youngsters with special needs.

In order to understand what we are involved in at the University it is first necessary to have in your minds a few statistics concerning our state. Vermont is a small state by most standards, and our population is only about 400,000. Our largest city, Burlington, with its population of 40,000, is the home of the University of Vermont, and can be considered the major cultural and financial center in the state. While Vermont can claim several other small cities, most of its 400,000 residents are dispersed over many small villages and towns, ranging in size from just a few families to maybe 300 or 400 population. Vermont has few large industries, and most of the state's revenue is derived from agriculture, tourism, or recreation. However, despite limited financial resources, Vermont has made a strong commitment to the education of its children, and can boast having one of the most progressive special education plans as any state in the nation. While time does not permit me to fully describe Vermont's "Consulting Teacher" model for special education, let me just mention that it has been looked upon by many experts in the field of special education as one of the most innovative and well thought out special education models in operation anywhere in the country.

Vermonters have always been recognized as being concerned with practical values, and this is readily evidenced in the state's current efforts to expand vocational education opportunities to all of its citizens. This is presently being accomplished through a state-wide network of comprehensive area vocational

centers, fourteen of which are now in operation, with a fifteenth in the final planning stages. Each of these area vocational centers is located in a large, comprehensive union high school district which cooperates with smaller schools in neighboring component districts to provide vocational education to students on a shared time basis, thus making vocational education available to virtually all secondary school pupils in the state.

In developing this comprehensive plan for vocational education, the State of Vermont has not neglected to provide for the special vocational education needs of its handicapped youth. In 1963, when Vermont first committed itself both philosophically and financially to support the development of a state-wide network of area vocational centers, it simultaneously made a commitment to provide within each of these centers an innovative vocational program for mentally retarded students between the ages of 15 and 21. This program model, known locally as "Diversified Occupations," has subsequently been implemented in each of Vermont's fourteen area vocational centers, and is currently providing vocational instruction for a total of 399 mentally retarded youth throughout the state.

I'd like to take just a moment or two at this point to discuss some of the major components of Vermont's "Diversified Occupations" model and briefly highlight its development from 1968 to the present. Such a discussion will, I believe, serve to provide a framework for evaluating some of the efforts the University of Vermont has undertaken over the past few years relative to professional development for vocational special needs personnel, and should also serve to point out the direction our program will need to take in the very near future.

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First of all, then, a brief glimpse at how the Vermont "Diversified Occupations" model came into existence. Statutory requirements dating from about 1956 mandated that Vermont's public school districts provide an equal educational opportunity for all children. Even so, it was not until the enactment of more substantial legislation that provisions were made for the implementation of special programs, facilities and services for youngsters with handicapping conditions. The first such programs in Vermont were focused almost exclusively on the needs of mentally retarded children at the elementary and junior high school levels. This situation persisted, with little in the way of secondary or vocational programs for the mentally retarded being provided until the enactment of the 1963 Vocational Education Act and its subsequent Amendments of 1968. As a result of these two significant pieces of legislation, Vermont initiated a bold and comprehensive plan to make vocational education and training available to all educable mentally retarded students between the ages of 15 and 21.

The decision to incorporate these "Diversified Occupations" Programs for the mentally retarded into each of Vermont's area vocational centers was jointly reached by the Division of Special Education and Pupil Personnel Services and the Division of Vocational and Technical Education of the State Education Department. At that time an agreement was entered into by these two agencies, pledging continued financial and technical support for any and all such programs. Under this cooperative agreement, approved programs for handicapped students located within the area vocational centers received an operating budget from the Division of Special Education and Pupil Personnel Services

based on the number of mentally handicapped students enrolled. The cost of construction of classroom and laboratory space, which is a part of the area vocational center and which is used for the vocational education of mentally retarded students is funded at 75% of the total construction costs by the Division of Special Education and Pupil Personnel Services. The remaining 25% is funded by the Division of Vocational and Technical Education. This division also provides 100% funding for all vocational education equipment used in these special needs programs, while the Division of Special Education absorbs 100% of the cost for equipment used in related academic classes. This agreement also provides that the Division of Special Education will pay 100% of the salaries of professional personnel employed in these "Diversified Occupations" Programs.

Under the provisions of this cooperative agreement, the first two "Diversified Occupations" facilities were opened at area vocational center sites in 1971. By the end of 1972, a total of ten such facilities had been completed and had programs in full operation. Three additional programs were opened by 1973, and the most recently completed facility started accepting its first class of students in January, 1975. The total state-wide plan will be fully operational when the final "Diversified Occupations" facility is opened at the St. Albans Area Vocational Center sometime in early 1977.

Let me take just a moment now to describe the "Diversified Occupations" program itself, and to mention the kinds of opportunity it is providing for the mentally retarded students of Vermont.

Basically, the "D.O." model is a four year program combining "hands-on" occupational training with a carefully prescribed program of related and "life-relevant" academic and social learning. The curriculum is individually determined for each student on the basis of a careful and thorough evaluation of his level of functioning, his interests and his aptitudes. The broad goal of the "Diversified Occupations" program is to provide each student with the social, academic and occupational skills needed to become a successful, independently functioning member of society.

The "Diversified Occupations" curriculum is based on "persisting life needs,"....those recurring functions required of individuals living in a democracy; requirements which persist throughout a person's life. They include such functions as the needs to be healthy, the need to be economically independent, the need to communicate effectively, etc. Rather than spending too much time attempting to enumerate the many life functions covered in the "Diversified Occupations" curriculum, I'll refer you to your copy of The VERMONT GUIDE FOR TEACHING ADOLESCENTS WITH SPECIAL NEEDS. You will find, I'm sure, that the GUIDE can far more adequately cover these many functions than I can here tonight.

In each "Diversified Occupations" program, students rotate through a sequence of carefully planned exploratory experiences in a variety of occupational areas, or clusters. These experiences include such areas as health occupations, metal working, office occupations, food services, grounds maintenance and auto services to mention just a few.

Through these exploratory experiences the student and the instructor will begin to determine each individual's interests and abilities. Students with

sufficient interest and aptitudes are taught the necessary entry-level skills and concepts in the "Diversified Occupations" program to permit them to enter regular vocational education programs for further training. If necessary, students who have been "mainstreamed" in regular programs may return from time to time to the "Diversified Occupations" laboratory for individualized remedial instruction as appropriate.

For the majority of students, out-of-school work placement will follow successful in-school experiences. Pupils are placed in cooperative work situations in the community through the regular Cooperative Education Program offered by the area vocational center. These students may also return to the "Diversified Occupations" laboratory as needed for further individualized instruction and guidance.

For those pupils who are unable to profit from integration into regular vocational education classes, the "Diversified Occupations" program offers intensive training in its occupational laboratories. When it has been determined by the instructor that the slower student is ready for more intensive training, he is referred to the vocational rehabilitation service for placement either in a sheltered workshop or other suitable facility or program.

It might be well to mention here that a large number of students completing their education in "Diversified Occupations" programs do not require referral to the vocational rehabilitation agency, but are able to successfully enter the world of work directly from their cooperative education placement. Unfortunately, I am not in a position at this time to give you any exact figures on this. We are in the process now, however, of implementing a follow-up study of all the students who have left "Diversified Occupations" programs since their inception, and we anticipate having some "hard" data on this in the near future.

I recognize that I have presented a very superficial description of Vermont's "Diversified Occupations" program model, but I want to move on now and talk about the typical staffing situation usually found in this kind of a program. The basic "Diversified Occupations" professional staff usually includes three instructors, working cooperatively in a modified "team-teaching" situation. This may vary, of course, depending upon the size of the program, but generally speaking, the "D.O." professional staff is comprised of a "heavy lab" teacher, a "light lab" teacher, and an instructor for related "special" academics. In some instances these professionals are assisted by a paraprofessional, or "aide." I'm sure this terminology must confuse you, so let me give you a few definitions to clarify what I'm talking about. The term "heavy lab" refers to those vocational experiences related to such occupational areas as machine operation, construction, power mechanics, carpentry and related industrial type operations. Ideally, the "heavy lab" instructor comes from a background of industrial education or some specific trade experience, and is able to relate his teaching to the real world of work. In the "Diversified Occupations" program, successful completion of "heavy lab" experiences is a prerequisite for entry into selected regular vocational education programs.

The term "light lab" on the other hand, refers to the types of "hands-on" experiences usually encountered in home economics, business education, health, child care and so on. In most instances, "light lab" instructors will hold a teaching certificate in home economics, health, or a related area. While much

of what is taught to the student in "light lab" can be considered related to "persisting life functions," these experiences frequently are also prerequisites for regular vocational education placement.

I believe the term "related academic teacher" is familiar to most of you here tonight. This refers primarily to a person trained in the area of special education, usually with an emphasis on teaching the mentally retarded, who is able to provide individualized remedial or prescriptive instruction to students demonstrating a wide variety of learning disabilities. It is the responsibility of this person not only to develop appropriate academic instruction to support the "heavy lab" and "light lab" components of the "Diversified Occupations" curriculum, but also to provide remedial instruction for students who are "mainstreamed" in regular vocational courses.

One has only to consider the obvious diversity of talents and experience required of the "Diversified Occupations" instructional personnel to recognize that recruiting qualified staff is one of the major problems encountered in implementing this particular educational model. When "Diversified Occupations" programs were first implemented in Vermont six years ago, it was recognized that existing teacher education programs were unable to provide a sufficient number of trained and qualified candidates to meet professional staff needs of this program. To alleviate this situation, the State Education Department approached the Department of Vocational Education and Technology at the University of Vermont with a request that it initiate a professional development program to prepare "Diversified Occupations" teachers to fill the emerging needs of Vermont's area vocational centers.

In response to this request, the Department of Vocational Education and Technology, in concert with the University's Division of Continuing Education, joined forces with the State Department of Education to offer two intensive inservice workshops during the summers of 1971 and 1972. Two local education agencies, the Essex Junction Area Vocational Center and the Burlington Area Vocational Center, cooperated by furnishing facilities and equipment for these initial professional development workshops. Nearly all of Vermont's currently employed "Diversified Occupations" teachers, as well as several area vocational center administrators having responsibility for special needs programs in their schools, were enrolled in these early training sessions. In all, a total of twenty-three persons participated in this beginning professional development effort and were directly responsible for developing much of the instructional materials and learning activity packages used in Vermont's first "Diversified Occupations" programs.

In 1972, a three-year planning grant from the Bureau for the Education of the Handicapped, U.S. Office of Education, made it possible for the University of Vermont to employ a full-time person to coordinate professional development efforts with "Diversified Occupations" teachers. This person, incidentally, was Marc Hull, whom I introduced to you earlier in tonight's program.

At the time this professional development program was first implemented, only two "Diversified Occupations" programs were in operation in the State of Vermont. However, twelve additional programs were scheduled to open in the immediate future. For this reason, a special effort was made to identify the staff needs of these anticipated programs and to provide immediate assistance

to assure an adequate supply of qualified personnel. This was accomplished through an effort to identify and train potential "D.O." teachers at the pre-service undergraduate level, as well as through intensive in-service with vocational teachers already employed in the respective area vocational centers where new "Diversified Occupations" programs were soon to be implemented.

As time went on, the professional development staff began to identify various professional personnel who were likely to come into contact with handicapped students in the area vocational centers, and a broad-based training model began to emerge. Over a period of three years, workshops and courses of study were developed to sensitize the entire spectrum of professionals functioning within the vocational centers to the needs and characteristics of educable mentally retarded students. Ultimately, undergraduate and graduate level courses were developed to offer in-depth training in the competency areas considered essential for providing vocational instruction to handicapped adolescents, and over a period of three years, more than 500 teachers, administrators and other educational personnel were involved in the professional development activities provided by the University.

In addition to its instructional and training efforts, the professional development program at the University of Vermont has been involved in a number of other types of service activities related to the improvement of vocational education programs for special needs students. These included, among other activities, the sponsorship of meetings for developing "Diversified Occupations" curriculum and identifying appropriate instructional objectives for all aspects of the program. A direct outcome of these meetings was the development of THE VERMONT GUIDE FOR TEACHING ADOLESCENTS WITH SPECIAL NEEDS which has been mentioned several times in this presentation. This GUIDE truly represents the dedicated efforts of many Vermont "Diversified Occupations" teachers and contains numerous examples of lesson materials that have been classroom tested over a period of several years.

I would like to end this presentation up with a few final comments relative to what has been accomplished over the past several years in Vermont. Implementation of this professional development program for vocational teachers of special needs students has presented numerous opportunities to "learn by doing." Some of the insights derived from these learning experiences may have some significance for those of you participating in this leadership workshop, but they should not, however, be construed as irrefutable facts, but only as a summary of observations and insights.

For three years the professional development staff has had an opportunity to observe Vermont's efforts to integrate students from "Diversified Occupations" programs into regular vocational classes. At present, nearly 50% of all eligible students have been integrated into regular programs on a part-time or full-time basis, with varying degrees of success. It has been noted, however, that most teachers feel that integration is profitable only to the extent that it leads to worthwhile learning experiences for the mentally handicapped student. The mere presence of a retarded student in a regular class does not always mean that the system is meeting his needs. This is basically because not all teachers and not all curricula are beneficial for students who have learning problems.

It would be presumptuous to imply that an infallible formula exists for preparing regular vocational teachers to successfully work with the mentally retarded student in their classrooms and laboratories. There are, however, certain basic principles and understandings which help to facilitate the successful integration of special needs students in regular vocational education programs. These, briefly stated, include: (1) the development of a basic understanding of, and sensitivity to, the learning styles of special needs students; (2) clearly stating educational objectives in terms of observable performance and carefully constructing task ladders of sequential enabling objectives; (3) preceding instruction of special needs students with pre-test assessments to determine the appropriateness of materials to be presented; (4) presenting concepts to be learned by special needs students in a clear, direct, and uncomplicated manner; (5) encouraging continuous involvement of special needs students through repeated questioning and positive, corrective feedback; and (6) regularly reviewing concepts presented and providing for appropriate practice of all skills learned.

Any professional development program that has as its objective the preparation of vocational education personnel to effectively meet the needs of handicapped students must concentrate on the attainment of the above mentioned skills and competencies. This has been our goal at the University of Vermont.

Thank you very much for your attention. I hope you all have a very successful workshop here at the University of Illinois.

THE HABILITATION PERSONNEL TRAINING PROJECT:
COMPETENCY-BASED EDUCATION FOR SECONDARY SPECIAL EDUCATORS

Dr. Gary M. Clark
Professor, Department of Special Education,
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Introduction

There are two reasons for presenting a description of the Habilitation Personnel Training Project (HPTP) to you at this workshop. First, it has potential as a product for your use in your teacher education programs. Second, it has some potential as a model for a process in your teacher education programs for developing your own competency-based program. In either case, we feel that you need sufficient information about our program to make some decisions as to its value for you now or possibly in the future.

This project was conceptualized some five years ago out of frustration with the lack of direction which existed in special education teacher education in regard to secondary personnel. A survey in 1971 had indicated that only about one-fourth of all special education personnel preparation programs in the country offered even one course related to the secondary level. Of those citing at least one course, the vast majority offered no more than the one course. The predominant emphasis in most of the nation's special education teacher education was, and still is, at the elementary level.

At the same time that preliminary plans were being made to develop a comprehensive teacher education program at the University of Kansas which also could serve as a model for other personnel preparation programs, the competency-based teacher education movement was nearing its peak of momentum. As an organizational and philosophical approach, it appeared to have exciting potential for our use in developing a model program.

The incorporation of the competency-based approach into our planning and development imposed a structure which had both advantages and disadvantages. The primary advantages focused on the necessity for precision in systematic definition and elaboration of what we thought secondary special education teachers (or habilitation personnel, if you will, since we wanted to prepare people for roles as secondary teachers and/or work experience or work study coordinators) had to know or be competent at to function effectively. The disadvantages were centered on the lack of "degrees of freedom" we had to operate within.

Funding was obtained for the development of this curriculum from the Division of Personnel Preparation, Bureau of Education for the Handicapped. We are in the fourth and final year of this development and are field-testing selected modules as part of our evaluation system. We would like to describe for you briefly, but in as much detail as possible, some of the process we went through in moving from competency identification to curriculum planning and development, how our model is being evaluated, and how our evaluation results look at this stage.

THE HABILITATION PROCESS AND THE SPECIAL NEEDS INDIVIDUAL

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I would like to present this morning a description of the basic habilitation process as we envision it in the Habilitation Personnel Training Project (HPTP). The term "habilitation" is a broader form of the entire teaching process, whether it is carried on in the classroom or through on-the-job supervision. In essence it is preparing for the complete life adjustment of the special needs or handicapped individual. The habilitation process as we envision it can apply to all levels of instruction--individual or group, one lesson, one day, one year.

The basic training population for HPTP is special educators, but we feel that the competencies we have identified could apply to anyone working with the special needs individual. I would like to stress here that the competencies HPTP has formulated arise from the habilitation process itself and what we will be talking about in the next few minutes is really a generic process which can be applied to any instructional situation.

Steps in the Habilitation Process

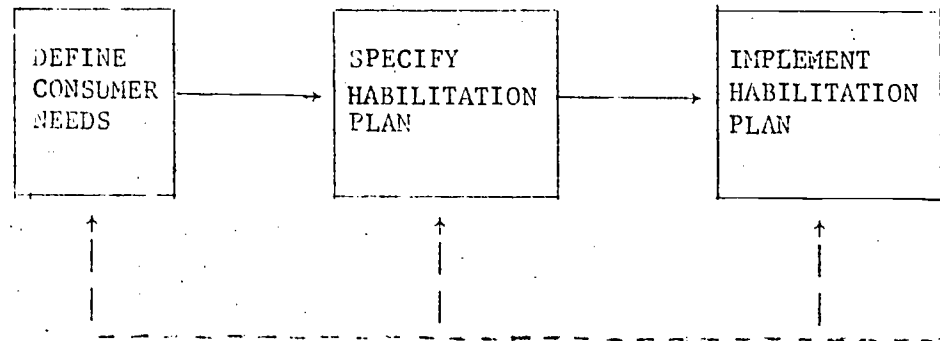
The basic habilitation process is depicted in Figure 1 and consists of four basic steps: (a) Define consumer needs; (b) Specify habilitation plan; (c) Implement habilitation plan; and (d) Evaluate effects of habilitation plan. It should be noted that this is a continuous system, with the results of the evaluation phase feeding back directly to one or all of the other components.

The first step in this process is defining consumer needs, as presented in Figure 2. The term "consumer" is used here to refer to the special needs or handicapped student, in our case at the secondary or adult level. This first phase basically encompasses finding out the basic competencies the student needs to succeed in his environment, measuring the degree to which he possesses these competencies, and specifying the additional development needed. The competencies we are talking about here fall into the areas of world of work, home, and self, and community and society. The educator at this point should emerge with an organized picture of where the student falls with regard to one or all of these areas.

Before proceeding with the other steps I should note that the Roman numerals and cluster designations you will be seeing in parentheses throughout the figures refer to the HPTP modules dealing with the specific steps presented. A listing of these modules is contained in Figure 5 (see p. 56).

Figure 1

STEPS IN
CONDUCTING THE HABILITATION PROCESS



9/

Figure 2

DEFINE CONSUMER NEEDS

- I. Identify Consumer Population
- II. Specify Developmental Needs
 - A. Identify development required by environment
 - 1. Identify tasks required by competency area
 - a. Identify competencies required by competency area (CLUSTER 2)
 - b. Conduct competency analysis (N IX)
 - 2. Conduct task analysis (N IX)
 - B. Identify status of student's development (N VII, N VIII)
 - 1. Specify parameters of needs assessment process
 - 2. Collect assessment data
 - a. Identify, select, and/or prepare assessment instruments
 - b. Administer assessment instruments
 - 3. Identify extent of student's development in competency area
 - C. Specify additional development needed by student (knowledge and skill)
 - D. Synthesize needs information gathered on student (N X)

The second step in the habilitation process is to specify the habilitation plan. The areas included in this step are presented in Figure 3. I would like to point out again that this plan could be for an individual for a given lesson, a day, a semester, or an entire year; it could also be for a group for a given lesson, day, semester, or year. Basically this phase includes identifying the options available in a given situation, selecting from these options, and "putting it all together" in a lesson plan, unit, semester plan, etc. The options available to the professional include both resources and procedures as presented in the outline. Examples of the various components are given in parentheses.

Implementing the plan the teacher or job supervisor has just designed is the third step in the habilitation process and is outlined in Figure 4. In essence this phase includes implementing each element of the habilitation process as defined in the second step.

Figure 3

SPECIFY HABILITATION PLAN

- I. Identify Feasible Component Options for Habilitation Plan
 - A. Define objectives for program (N VI)
 - B. Identify constraints on component selection (money, available resources)
 - C. Identify options in selecting components
 - 1. Identify resource components available (CLUSTER 5)
 - a. Environmental resources
 - b. Instructional media
 - c. Resource personnel (school and community)
 - d. Referral resources (school and community)
 - 2. Identify procedural components available (CLUSTER 6)
 - a. Instructional management procedures (teaching methods, learning activities)
 - b. Behavior management procedures
 - c. Evaluation procedures
- II. Specify Component Options to be Included in Habilitation Plan
 - A. Select resource components (from C-1)
 - B. Select procedural components (from C-2)
 - C. Identify required procedures for referral components
- III. Synthesize Specified Components into Habilitation Plan (P XIV)

Figure 4

IMPLEMENT HABILITATION PLAN

I. Implement Components of Habilitation Plan (I)

A. Implement service delivery components

1. Implement selected instructional components
 - a. Resources (environmental, media, resource personnel)
 - b. Instructional management procedures
2. Implement selected referral components
 - a. Referral procedures
 - b. Followup procedures
 - c. Corrective procedures

B. Implement selected behavior management components

C. Implement selected evaluation components

II. Integrate Habilitation Plan into Habilitation Program for Individual/Group (I)

The final step in the process involves evaluating the effects of the habilitation program which the educator has designed and carried out. This phase begins with the collecting of data not only on student performance but in such areas as employer reaction to the program, parental satisfaction, community awareness of the program, etc. The purpose here is to collect the types of data that will allow the educator to ascertain the degree to which the objectives of the program have been met. These objectives should include not only goals for individual students and the group as a whole, but goals for the program components. Once the data have been collected and analyzed, the evaluation phase includes feedback to the first three steps in the habilitation process.

Summary

I hope that this view of the habilitation process has been of some help to you. We have found the isolation and specification of this process to be an ongoing endeavor at HPTP, one that is always subject to revision. Many of the phases we have defined are not new to most of you, but we feel we have made a contribution to the field of teacher education by "putting it all together." In attempting to define the competencies to be addressed in our modules, we have found that viewing the teaching act as a process has been quite helpful. I would urge you to consider this approach in designing your own teacher education program and encourage you to write for our Final Planning Report, which discusses our approach in more detail and presents the basic habilitation process in lattice form.

HABILITATION PERSONNEL TRAINING PROJECT MODEL FOR EVALUATION

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Evaluation consists of matching a set of statements about what was done to a set of goal statements about what was desired to be done. The process or activity of testing this match resolves into formative and summative activities.

The nature of evaluation should be considered separate from the nature of research. An illustration should help. In research a statement, usually called an hypothesis, is tested to see if it is true or probable with respect to another good descriptive statement of reality. Such a statement is, "The sun is at the center of the universe." In evaluation a statement, called a goal or objective, is matched to or evaluated against another descriptive statement of what really is the case. Such a goal could be, "The world should be the center of man's attention." In practice, these statements and descriptions are translated into terms which refer to things or activities which we can observe. Research and evaluation share this translation process. What they do not share is the kind of conclusion to be made from each endeavor: truth or probability on the one hand, and valuation of the match between desires and realizations on the other hand.

For the Habilitation Personnel Training Project, the goal statement, in its broadest terms, was embodied in what we now call the lattice, illustrated in Figure 1, the Content Model. This defines, in essence outlines in horizontal form, the content desirable for educating special class teachers at the secondary level. The four major topics were, "Define Consumer Needs,"

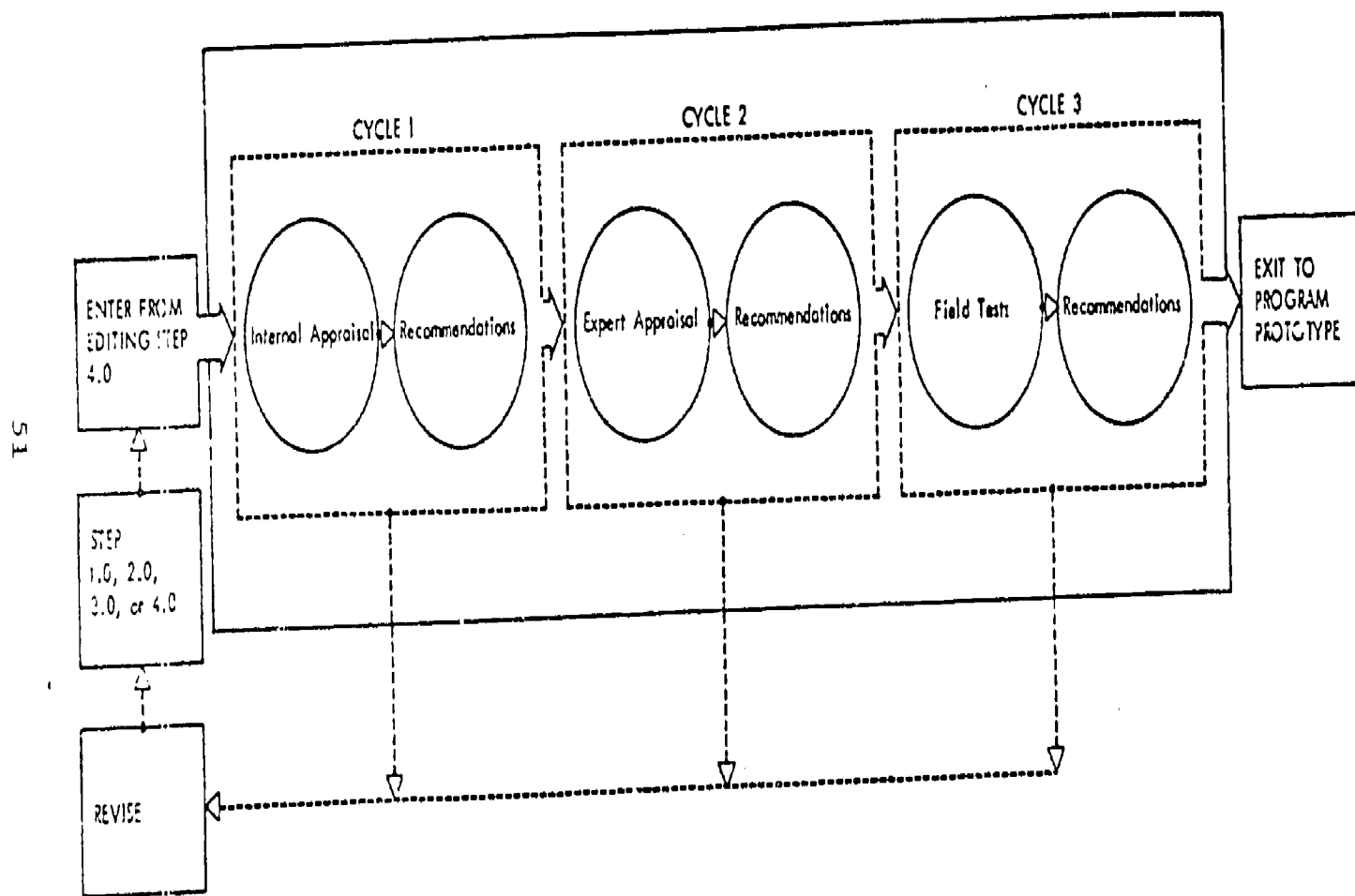


FIGURE 3. THE EVALUATION-REVISION CYCLES IN STEP 5.0

"Specify [an Implementation] Plan," "Implement the Plan," and "Evaluate the Effects." This lattice-outline has since been converted to our list of 29 modules which is organized according to a delivery sequence model (refer to Fig. 5 p56) the list of modules. Code indices consisting of a letter and a roman numeral tie each module to one of the four major content categories from the lattice. In short the content model was changed to a delivery sequence.

This change from content to content delivery was due to informal formative evaluation as the modules were first produced. Since then formative evaluation was parcelled into three cycles of subactivity. These three cycles were inserted into the production process illustrated in Figure 2 as recommended by Thiagaregan, Semmel and Semmel (1973). The cycles inserted were Internal Appraisal, Expert (and External) Appraisal, and Field Testing as shown in Figure 3. The feedback integral to each of these cycles has resulted in improvements in content and delivery as Ms. Wimmer indicates in her discussion of our data.

Some formative work remains to be done. For example, at this workshop we have, in the display area, a felt board presentation of the major topics in the module, "The Work/Study Coordinator." We invite your comments on this display.

The summative evaluation of our broad statement regarding content delivery remains to be done. The approach we will take relies on the nature of evaluation: that is evaluating the match between what is desirable and what we did.

One of the major things we desired to do was plan and validate "a comprehensive training model for optimizing habilitation services in the public schools." The planning and formative evaluation of such a model has been completed. This has resulted in a limiting of the scope of the model and in a shift toward delivery. Summative statements regarding the validity of this final model remain to be made.

A general review of all twenty-nine delivery modules which we will produce will not be possible within the limits of the present project. Nevertheless, we should be able to provide summative data on a subset of modules which we believe (1) are especially well done, (2) are especially popular and (3) are especially pertinent. We should be able to make reliable statements about these selected modules and about how student teachers respond to working with them. Such summative work should provide a comparative picture of what we desire and what we accomplished.

In summary, evaluation consists of matching a description of what was done to a statement of what was desired. For us at HPTP, this has meant considerable work and frustration in formatively evaluating our goals and module production. It will mean considerable additional work in summing up our accomplishments.

I would suggest that as you set goals for collaboration between vocational and special education personnel, you also will face considerable work as you translate goal statements and descriptions of accomplishment into things and activities to which you can point. Given such work, I believe you will be able to point with pride.

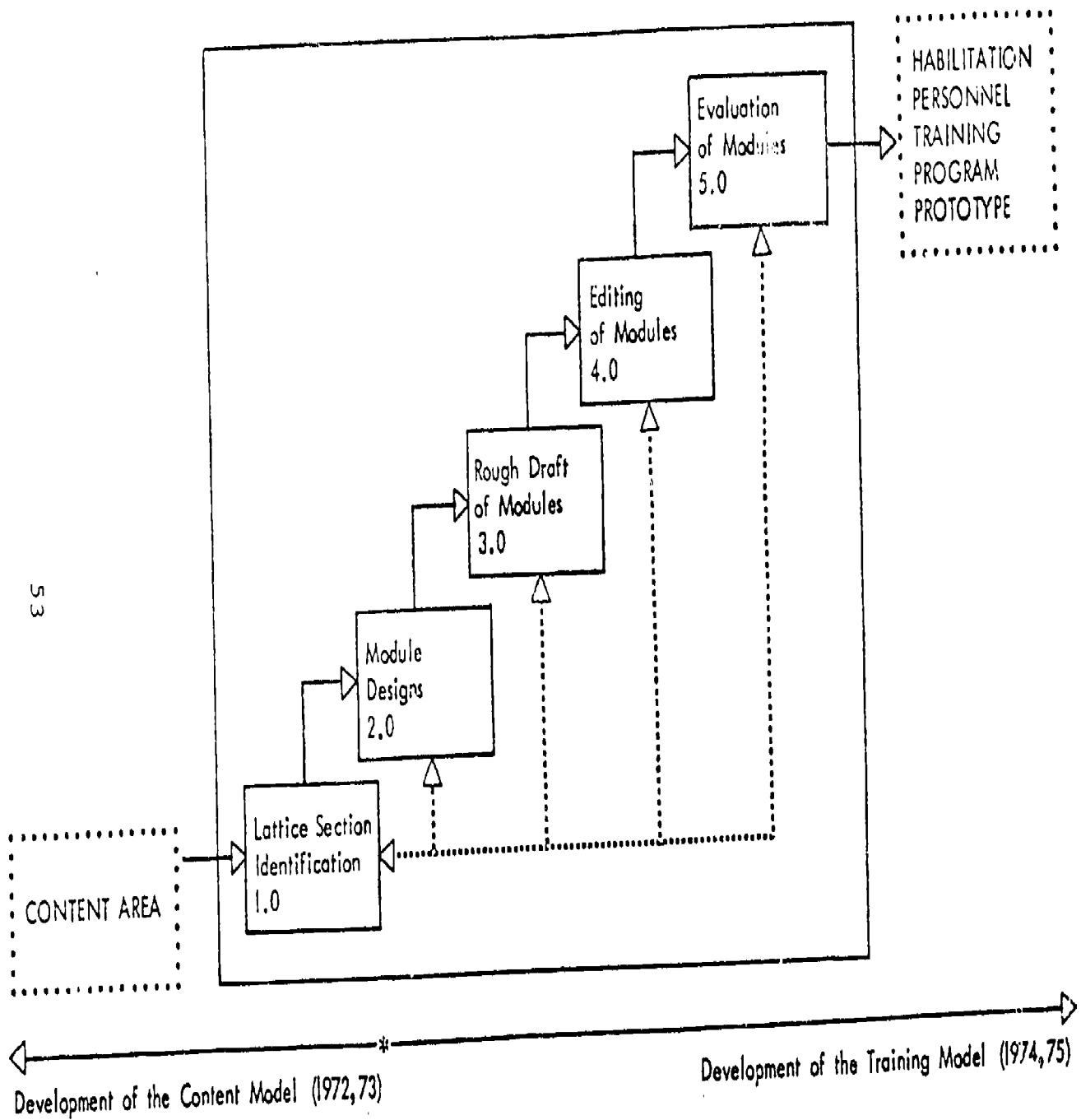


FIGURE 2. THE MODULE PRODUCTION PROCESS INCLUDING FORMATIVE EVALUATION STEP 5.0

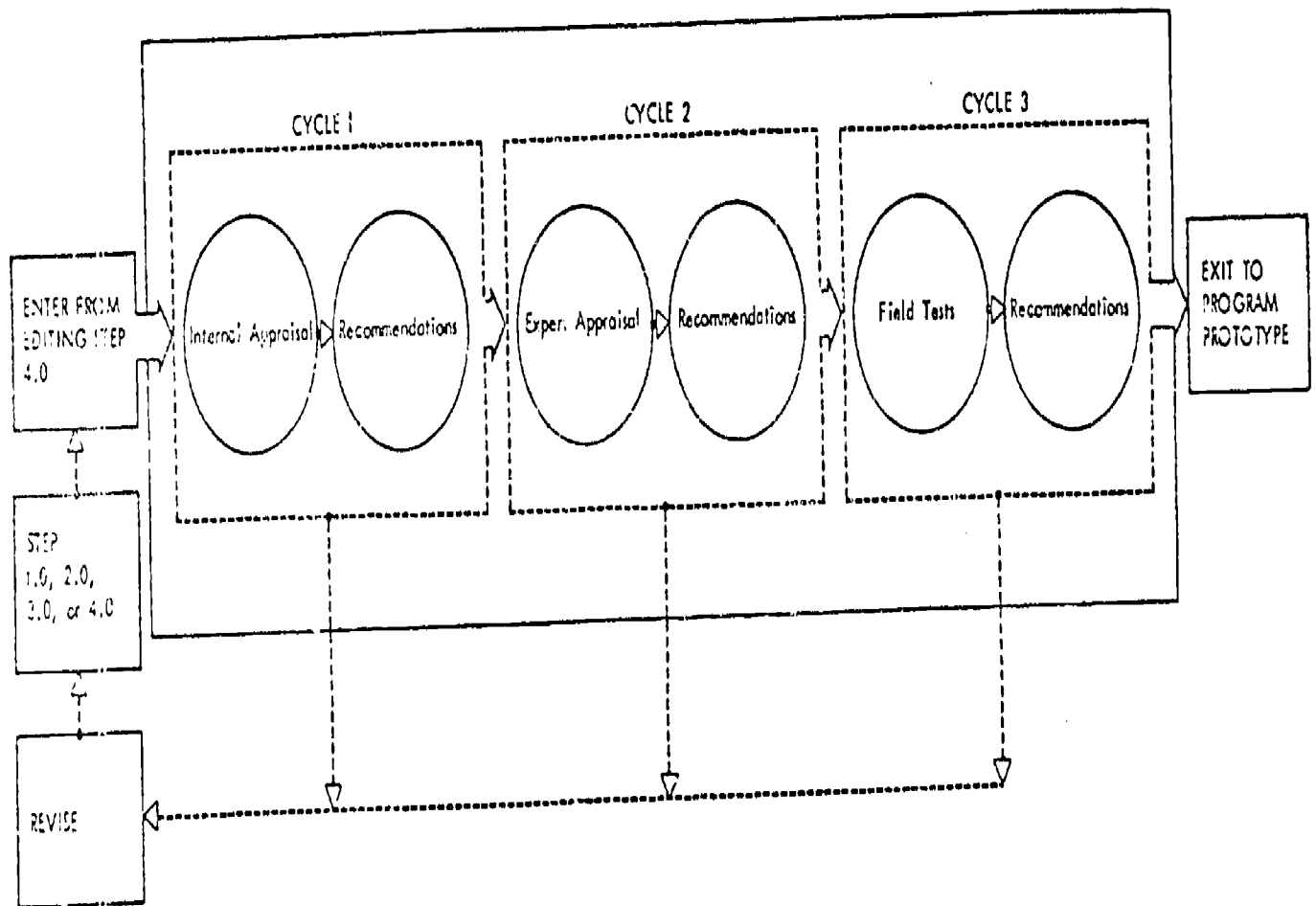


FIGURE 3. THE EVALUATION-REVISION CYCLES IN STEP 5.0

Figure 4

EVALUATE EFFECTS OF HABILITATION PROGRAM

- I. Identify Effects of Habilitation Program (E II, E III)
 - A. Organize data for analysis
 - 1. Collect evaluation data (on student performance, employer reaction, etc.)
 - 2. Implement data organization procedures
 - B. Apply data analysis procedures
 - C. Synthesize data to identify effects of habilitation program
- II. Specify Changes in Definition of Consumer Needs (E IV)
- III. Specify Changes in Specification of Habilitation Plan (E IV)
- IV. Specify Changes in Implementation of Habilitation Plan (E IV)

Figure 5

HABILITATION PERSONNEL TRAINING PROGRAM MODULES

CLUSTER 1: Perspectives

MODULE N I: The Needs of Exceptional Youth and Adults
MODULE P I: Available Roles in Secondary Special Education
MODULE P II: Career Education
MODULE E I: Program Evaluation

CLUSTER 2: Competencies for Independent Living

MODULE N II: Adult Adjustment
MODULE N III: The World of Work
MODULE N IV: Home and Self
MODULE N V: Community and Society

CLUSTER 3: Needs and Objectives

MODULE N VI: Behavioral Domains and Instructional Objectives
MODULE N VII: Assessment Resources and Techniques
MODULE N VIII: Assessment and Interpretation
MODULE N IX: Task Analysis

CLUSTER 4: Parameters of Planning

MODULE P X: The Classroom Teacher
MODULE P IV: The Work/Study Coordinator

CLUSTER 5: Factors in Planning: Resources

MODULE P V: Audiovisual Equipment
MODULE P VI: Physical Environment and Classroom Design
MODULE P VII: Instructional Resource Personnel
MODULE P VIII: Teacher Aides and Paraprofessionals
MODULE P IX: Referrals
MODULE P X: Content-Related Resources

CLUSTER 6: Factors in Planning: Procedures

MODULE P XI: Instructional Methods and Teaching Aids
MODULE P XII: Behavior Management
MODULE P XIII: Communication and Counseling Procedures
MODULE E II: Evaluation of Student Performance
MODULE E III: Evaluation of Program Design Components

CLUSTER 7: Program Implementation

MODULE NX: Student Needs Assessment
MODULE P XIV: Program Design
MODULE E IV: Evaluation
MODULE I: Practicum

EVALUATION RESULTS, 1974-75

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During the 1974-75 year, five instructional packages were run through the entire evaluation sequence. Some of the modules were field tested more than once in different settings, with different instructors and different trainee populations. I will describe for you very briefly the results of the evaluation of these packages. More detailed explanations of the evaluation procedures and results are available in the Second Formative Evaluation Report which is available from the Habilitation Personnel Training Project (HPTP).

Cycle I -- Internal Appraisal

The internal appraisal sequence of evaluation was chiefly concerned this year with the technical quality of the instructional modules. Two appraisers, the project director and an experienced special education teacher and writer, reviewed each module at the end of the editorial stage, looking primarily at appropriateness of content, technical consistency, and educational validity of the materials. Changes in modules as a result of this phase of evaluation were generally due to appraiser comments of the following types:

1. Value of a particular resource
2. Repetition of content material
3. Need for addition of a particular resource
4. Need for a better description of a particular resource
5. Quality and clarity of specific test questions
6. Logical order of competency units

On the whole, reports from internal appraisers have been positive, with modules requiring little major revision.

Cycle II -- Expert Appraisal

During the 1974 calendar year, contacts were made with professionals throughout the country having expertise in areas of special education, measurement, curriculum design, competency-based education, and teacher training. Those persons selected were asked to act as "expert appraisers" and evaluated one or more modules according to a specified format which requested both objective and subjective ratings. Each module was evaluated twice.

A response of "unacceptable" was given in only one area: "Number of Examples," where the appraiser suggested there was too much material. "Below average" responses were received in only 6 areas, and were never above 20%. Combined responses of "average" or "better than average" were given to 10 scales on 75% of the appraisals, and "better than average" responses were given on 50% of the appraisals to 6 of the 10 scales. Overall, the modules were seen to be of average or better quality in areas of content appraisal.

The second aspect of expert appraisal was concerned with more subjective responses regarding module improvement. Responses from expert appraisals were generally quite positive. Areas of weakness pointed out in the previous evaluation year, and acted upon by project staff were no longer seen as significant as they were seldom mentioned. Outside of minor revisions or re-wordings, only two areas of weakness were mentioned more than a few times--weakness of pre and post tests and some lack of content specificity to the field of special education. Focus on these areas is supported by other evaluation data and, as a result, extensive work is presently being done to remedy these problems.

Cycle III - Field Testing

Field tests of instructional modules were carried out at four major universities during the previous year. Field test participants included both undergraduate, graduate, inservice, and preservice students. Student trainees were asked to complete forms which supplied demographic as well as affective information concerning the modules used. Instructors also completed evaluation forms and maintained records concerning instructor-student contact time, and cognitive data such as pre and post test scores.

There was a considerable increase in percent of items correct from pre test (71.4%) to post test I (90.9%) and post test II (94.2%). Trainees who did not achieve criterion on the first post test were allowed to take the test a second time. These figures indicate that there was learning from instruction with the modules.

In the area of trainee evaluation of modules, a conservative method was utilized to analyze data from Instructional Module and Resource Evaluation forms. Using a 5-point Likert scale, the neutral and both negative responses were considered to be negative, and only affirmative responses considered positive. A summary of these data yielding 60% or more was considered significant, and 80% or more was considered highly significant. Significant data were taken as indicative of a major strength or weakness.

Overall, 14 out of 24 areas covered on the evaluation forms were considered strengths. Positive areas were things such as personalization of instruction, self-pacing, amount of knowledge gained, worthwhile learning experience, value and variety of enabling activities, and effectiveness of activities for mastery of objectives. A weakness was the assessment used in pre and post testing--an area receiving intense work at this time.

Instructor evaluations closely paralleled trainee evaluations, again pointing out the weakness in pre and post testing. Other negative comments were more indicative of problems in field test situations or the data collecting

load rather than of problems with the materials themselves.

Data from Instructor-Student Contact forms showed the average instructor-student contact, per 4-week module to be approximately 64.28 minutes--a time commitment which does not seem unreasonable. The majority of this time was spent in evaluation activities.

On the whole, the results of the 1974-75 formative evaluation were helpful to project staff and seemed to reflect positively on the HPTP materials. The two major areas of criticism were the assessment instruments and the occasional lack of specific relationship of content to secondary special education. The two areas are presently receiving a great deal of attention and steps have been taken to remedy this situation.

As I mentioned previously, the evaluation report for the preceding year is now in print and available from the HPTP office, if you are interested in further, more specific information concerning either the evaluation model or results.

THE REHABILITATION PERSONNEL TRAINING PROJECT:
COMPETENCY-BASED EDUCATION FOR SECONDARY SPECIAL EDUCATORS

Gary H. Clark

Conclusion

For some of you, we have told you more about HPTP than you wanted to know. I had the feeling throughout the presentations that we were selling you something--or at least trying to--and only a few were very obvious in showing they might be potential purchasers. As I said earlier, we do feel we have, or will have, a product which has possibilities for use in your teacher education programs. If the content is only partially relevant, perhaps the process will be of use to you.

I have to be honest, however, in saying that if the process is what you choose to use, be prepared for a rigorous, expensive experience which could last several years. This is assuming that you want something that is comprehensive and has some degree of sophistication to it in terms of format, organization, mediation, and internal consistency. We have spent four years and close to one half million dollars on this project. During our two peak developmental years we had 17-18 staff involved with close to 9 full-time equivalents. This may be discouraging to you, but it is not meant to be. It is meant to be an honest appraisal of what the process may require if you want to develop your own. Hopefully, some of the planning and development reported by our project could minimize the amount you would have to experience. We had no precedents or previous experience to draw on and there was a lot of trial and error. You could be spared this to some extent.

If you see the process as being too complex, too expensive, too time-consuming, or generally inappropriate for your needs, there still is our product. We seriously doubt that anyone will see the entire modular sequence of 29 or 30 modules being adopted intact as a system. I think that the modules are going to be most effective in supplementing traditional personnel preparation courses or serving as additional offerings through individual study. The specific content of each module is such that parts of the whole can be used without having to be committed to the whole curriculum.

We invite you to visit our display and examine some of the sample modules. Evaluate them with the understanding that these particular modules represent only those modules which are at the "knowledge level" basically and that other modules are being developed which focus on the "application" or "doing" level. Our end goal, as is yours, is that our graduates not only "know about" but "can do"!

PROJECT PRICE: AN INSERVICE CAREER
EDUCATION TRAINING PROGRAM

Dr. Donn Brolin
Department of Counseling and Personnel Services
University of Missouri

Project PRICE is a federally funded project of the U.S.O.E.'s Bureau of Education for the Handicapped, Washington, D.C. The project is being conducted within the College of Education at the University of Missouri - Columbia.

PRICE is an acronym for "Programing Retarded In Career Education." The emerging Career Education movement, stimulated by former USOE Commissioner Sidney Marland, has become recognized as a viable educational concept and has emphasized the importance of special and vocational educators working together. With the thrust toward mainstreaming handicapped youngsters, it becomes important for regular class teachers, counselors, and administrators themselves to have positive attitudes and training so these students' educational needs can be most appropriately met.

Support for the need for educational programs for the handicapped becoming more occupationally-oriented has been demonstrated by several studies. Other research has found that personal-social and daily-living skills are also highly related to the vocational and community adjustment of our handicapped citizens. Research, I have conducted on the educational needs of secondary level retarded students found that special education teachers felt occupational preparation was most important for these individuals to receive in high school program although personal-social and daily living skills were also felt to be extremely important.

Special education personnel have come under undue criticism regarding their inability to successfully meet all the needs of handicapped students. Other school personnel, because of their lack of knowledge about handicapped students, have generally tended to avoid their responsibilities to them. Thus, efforts to improve educational services to handicapped students should focus on existing school personnel who, with the special education teacher, can together provide a better coordinated career education program for these students. It is imperative that we retrain current personnel types to better meet the needs of these students as the career education movement affects the total school program.

Project PRICE addresses the need of preparing certain types of school personnel to appropriately work with educable retarded students in their classrooms and within a career education context. PRICE advocates emphasizing the career development of retarded students so they leave the school system prepared for all aspects of successful community living, including working.

Project Objectives

The main objective of Project PRICE is to design an approach to train certain school personnel to better meet the needs of educable retarded students

within a career education context. The project proposes to: (a) designate and develop an inservice/staff development training model; (b) identify and develop appropriate types of techniques, materials, and experiences to train certain types of school personnel; and (c) complete and disseminate an inservice/staff development training program that can be used by interested school systems.

Procedure

To meet the above objectives, an emphasis on field input and participation forms the main thrust of our project. The first project year focused on: (a) conducting an extensive Needs Assessment Study in each of the six Midwestern cooperating school districts regarding inservice training needs; (b) input from several Advisory Committees; (c) literature review; (d) preparing training materials and; (e) a Trainers Workshop for a cadre of personnel from each school district.

The second project year has concentrated on conducting a series of six PRICE workshops in six Midwestern school districts by field-testing our Trainers Manual and training materials. This has resulted in a considerable revision in all aspects of our training program.

The third and last project year (June 1, 1976 - May 31, 1977) will consist of evaluating the effects of the career education programs that are implemented in the six school districts, re-writing our Training Program and conducting field-testing workshops in several new school districts throughout the country. Trainers workshops will be held at the University of Missouri - Columbia in early Fall. An extensive evaluation component has been designed to assess project effectiveness.

Major Outcomes

The final product of the project for each cooperating school will be a field-tested and validated inservice/staff development training manual which will include:

- An Objectives-based Career Education for the EMR Program Guide for the school district.
- A Resource Guide containing information about materials/development, equipment, community support, and other pertinent data.
- An Implementation Guide for initiating the program plan in the school district.
- A competency based Process Check Guide for staff in critical and basic components.
- An Individual Self Study Guide that includes knowledge, skills, and attitudes.
- A Group Process Guide for values clarification and personal development.

Availability of the training program to school districts desiring to purchase the PRICE Training Program at the completion of the project is contemplated.

Presently Available PRICE Publications

Project PRICE has written and distributed several Working Papers related to career education of retarded citizens. Of particular significance to schools has been the 22 career education competencies which we believe are critical for students to acquire if they are to attain a satisfactory level of career adjustment. We have identified student materials and other literature that can help teachers instruct students in each of these competency areas. The Working Papers we have presently available for the cost of printing and mailing are:

- Working Paper No. 1 - "Programming Retarded in Career Education" - \$.75
- Working Paper No. 2 - "Career Education Materials for Educable Retarded Students" - \$1.25
- Working Paper No. 3 - "Career Education: Its Implications for the Educable Retarded" - \$.50
- Working Paper No. 4 - "Daily Living, Personal-Social, and Occupational Skills Development for Educable Retarded Students" - \$1.00
- Working Paper No. 5 - "Proceedings of Project PRICE Trainer's Workshop" - \$1.25
- Working Paper No. 6 - "Career Education Materials for Educable Retarded Students" - \$1.25

A seventh Working Paper reporting the results of our Needs Assessment Study will be available soon. Copies of these may be obtained by writing me and sending a check made payable to the Curators of the University of Missouri.

Inservice Training Considerations

Based on the almost two years of experience we have had in our inservice training project, we have found the following to be of particular importance in conducting our type of inservice workshops:

1. To get firm administrative commitment to your project and state department support where necessary to assure ultimate cooperation for the workshops and actual implementation afterwards.
2. To use a cadre of personnel in the school district to do as much of the training as possible. These individuals should be dynamic, energetic leaders who have a strong interest and commitment to the project. Train them to be effective trainers as they are the key to your ultimate effectiveness. A well-designed Trainers Manual is essential.
3. To be sure the school personnel are well informed of the project before the training is conducted.
4. To provide extra incentives for participating in the workshops, e.g., salary credits, college credits, special recognition, etc.
5. To select participants for training who are actually willing to consider working with handicapped students. There is no sense in "forcing" training on those who will not change their attitudes and way of teaching.

6. To conduct the inservice training in a setting outside of the school in a pleasant setting where there are few distractions from everyday business. Eating facilities should be nearby.
7. To limit one day workshops to no more than 5 or 6 hours. Participants become fatigued after so much concentrated training at one time. Give participants opportunity to move around.
8. To vary workshop design with few lectures, warm-up activities, gaming techniques, considerable participant involvement, media, hands-on experiences, coffee breaks, etc.
9. To focus early workshop efforts on building a teamwork relationship and a cooperative, positive attitude.
10. To provide a variety of media that is attractive, short, easy to read, and well-organized. Transparencies, slide/cassette presentations, films can enhance a workshop immeasurably. Poor media can be its demise.
11. To limit the number of handouts, particularly if lengthy and cumbersome. Concise and highly relevant information should generally only be disseminated (unless college credit is awarded). Easy reference to the material during the workshop sessions is necessary.
12. To avoid assignments to participants between workshops unless they are taking the inservice training for college credit, pay, or other remunerative aspects.
13. To publicize the inservice workshops in a Newsletter, newspaper articles, etc. and give people recognition for their efforts.
14. To emphasize the "how to do it" so the participants can understand their roles and how they may most appropriately be accomplished.
15. To utilize Advisory Committees and consultants to give considerable input on inservice training program content and design and to evaluate their effectiveness in the field.

The above are some of the major considerations we have found important to the success of our inservice endeavors. We believe universities can play a major role in developing effective inservice training programs but that such a wide array of expertise is needed that a large amount of practitioner input and evaluation is necessary.

Vocational education and special education personnel are perhaps most significant in the education of our handicapped students. Let us work together so these students achieve the education they so rightfully deserve.

VOTEC AND THE SEVERELY HANDICAPPED: A NEW LINK-UP

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I would suspect the vast majority of you brushed your teeth this morning. I hope so. I wonder how many of you when you were brushing your teeth gave very much thought to your toothpaste. The next time you do I would like you to look at your tube of toothpaste and realize that probably in the history of toothpaste there have been few if any occasions where the entire tube has been used up. In the life of every tube of toothpaste there comes a moment when an administrative decision is made that the amount of resources needed to get any more out exceeds the value of what would be gotten out and so you chuck it. For most of us we've had the humiliating though fortunately private experience of having to reverse our administrative decision. We go dig it out of the garbage can because we need to brush and there ain't no other toothpaste and we find that given a little more resource not only is there more toothpaste but it's exactly the same toothpaste that we got prior to having thrown it away. All that's needed is a set of circumstances that says it's worth coming up with more resources like a little harder push on the thumb and for some of us who have been in certain kinds of circumstances it's phenomenal just how many more brushings we can get out of that thing that we felt was useless. It's also phenomenal what we can get if we're willing to push hard enough and bruise our thumb or get the right angle on the sink when we push hard, how we can just keep getting more and more toothpaste.

You people are talking primarily in this conference about mildly and to a lesser degree moderately handicapped individuals. I'd like you to know that for severely and profoundly handicapped individuals the data are already available to show that if you want to push hard enough on the toothpaste you can find basically the same quality product as you can anywhere else given the commitment to utilizing the resources. I'm going to spend just a few minutes describing that to you, then we can talk a little more about the kinds of individuals that you are thinking about in your mind regarding this conference.

If you people will look up here you'll see an assembly. This is part of a riding mower. It's the brushes for an armature and there are some 15 or 20 parts that have to be assembled and crimped and springs put on and other kinds of things done. I received a letter dated December 30th from E.B.I. Breakthrough Inc. in Lake Odessa, Michigan, a sheltered workshop for severely handicapped people. Basically without going through the entire letter they said that they were given the opportunity to produce these. They were told that if they could meet a quota of 2,000 units per day they could get the contract. The company shipped 472 units to be assembled so that they could then check for quality. The workshop went ahead and did the 472 units and they were able to meet the quality. It took 15 people 5 working days to complete the 472 units. Fifteen of their people were working for 5 days to just get 472 done but they were told in order to meet the quota they had to produce 2,000 a day.

They had an opportunity to utilize some instructional technology that they had not had available before. Using one form of task analysis which was designed

specifically for people who are very difficult to train, they took 6 individuals out of that 15 and they trained them. What they did was they first analyzed this task. They did what is called a content task analysis which asks the question: "what are the steps, the teachable components, into which this task can be divided?" Then they did a process task analysis which is a completely separate set of operations which says: "how does one teach the content to the learner?" It's an instructional procedure that one designs specifically for people who find it difficult to learn.

Here's what happened. They did individualized instruction with 6 severely handicapped people. The training time took between 20 and 60 minutes. At the end of the first day following that individualized instruction 6 people assembled 882 units instead of 15 people assembling 472 units in 5 days. The production rate on following days was: 1393, 1213, 1612, and on the sixth day 1868 units. The error rate for that same period of time was 4%, and for the last two days the error rate was 2%, and thereafter the error rate was 1/2 of 1%. What does that say? Something very, very simple. It says given a commitment to an instructional technology, and to real genuine productivity that the difference between people is not really what they're capable of knowing, it's what it takes to get them there.

Now if I may be so bold, one of the things that I see in vocational-technical ed. and in special ed. that has bothered me very, very much is a lack of awareness about this distinction that I made a couple of minutes ago between content and process, between what is taught and how it's taught. When I listen to educators in both of those disciplines you hear them talk about curriculum. Curriculum is what to teach. You hear them talk about class size, that's an administrative issue. You hear them talking about characteristics of the learner. It would be nice to think that if I know that this person has epencephalon folds and has an extra chromosome here and there and this and that and the other thing it's going to tell me something about teaching. This hasn't happened. You get a person in your class and it says I.Q. such and such. I've never seen an instance where knowing somebody's I.Q. has made it more likely that you'll give him skills, more likely that you'll think him capable, more likely that you'll extend the energies and the resources to see that he gets somewhere. And yet the focus of attention is on class size, organizational structure, administrative structure, who's going to do what, and on and on and on. The area that consistently loses itself down in the back of a curriculum guide or on a shelf somewhere, or in some faculty meeting is how do you teach and should you teach?

And when you look at this, it's no wonder. If we take voc-tech, for instance, most of the work that's been done in that area has been done with normal people. A lot of the work that's been done in special ed. has been done with normal people, normal people who weren't doing so well and in a final analysis are really hard to find especially when they disappear so nicely in society despite our efforts to keep them labelled. But they just go out and do it.

You know how us normal folk get what we know? This is a critical issue. How do you get into normalcy? You know, maybe I should take a minute to tell you. If we're talking about people with special needs. There's an inference there that they are one group and there must be an alternative group for people who do not have special needs. I assume that all of you in this room here perceive yourself as not the group under discussion. All right? And I'd be interested in

knowing how you got there. That means, I suppose we're talking about people who are normal and people who are not normal. There aren't very many ways that I can think of that really allow us to distinguish 'them' from 'us'. First of all, because in the final analysis you really can't. I'm not going to go too far off into that but I want to talk about this business of the difference between some people and other people as it relates. Most of us get most of what we got, or virtually all of what we got from exposure. Exposure is when somebody sticks it out in front of you and says "eat it up." And you take it and you read it, you look at it, somebody says something, it comes floating on in just because it was there in front of you. And you pick it up, you pick up enough of it, you get enough of it, you look like enough other people. You're the "us," instead of the "them." You've made it into normalcy. When somebody doesn't, our society has built up so many defense mechanism and so many ways of being comfortable that we say O.K. these people can learn and these people can't. These people are special needs, you say at this conference. What are their special needs?

When you talk about somebody with a special need do you talk about a person who isn't going to know as much as another person or are you talking about a person who requires a different set of circumstances in order to know what the other people who don't have the special needs know? In our data, and our particular way of looking at things, says it's that second explanation that's the real one. And that is the people you have that are coming into your shop courses, that are coming into your career ed. courses that all of those people are basically people who require something different in order to know rather than people who aren't going to know the same as someone else is going to know. That seems to be a very significant difference.

The way you get them there is by what we call power. It's how much resource, how much planning, how much creativity, how much commitment, how much instructional technology the teacher must come up with in order for the person to know what there is to know. From this perspective we would say whoever you have is capable of knowing whatever you want, if you're capable of coming up with the technology, with the power, with the resources, and with the expectancy to get him there. We have carried this further than you might imagine. Let me give you a couple of examples.

Dave Turner, a graduate student at the University of Illinois, wrote a task analysis for joining the edge of a board. I would imagine a number of you people here know what a joiner is and know the process of doing all of that. In this task analysis there are a few things that I want to point out. When you get back into his content task analysis (which describes what it means to use one of those machines), he says after identifying (he's already identified all of the tools and everything else) and acquiring the tools, the person is to go and select, and it lists what the tools are. The second step is to place each tool in its not-in-use position and he has in here that each tool has an in-use position and a not-in-use position. Now, for those people that learn from exposure if they have a brush, tri-square, a scale, a pliers, a screwdriver, and a hammer, it may be the case that when they pick up the screwdriver and do what they have to and stick it over here, the next time they need the screwdriver, the amount of energy, thought, time, etc. required on their part to find it is going to be very short. It may be that they are so clear as to what a screwdriver is that there's no problem with that. It may be that very little thinking has to

go into finding that screwdriver the second time. But it's an oversight if you're working with somebody who finds it difficult to learn, to create a set of circumstances that every time he does something it's a new problem. We say people find it difficult to learn, no wonder, if one time the screwdriver's here and the next time the screwdriver is there, and the next time it's down here. These are three different problems to somebody who has trouble finding that screwdriver. But if the person learns from the moment he begins using the machine, that when his hand reaches out right there, that's where the screwdriver is going to be, then all of a sudden there's one problem to learn instead of a possible infinite variety of problems. So by having nothing more, just a simple little thing like an in-use position and a not-in-use position we have reduced what could be a whole series of problems to learn with no control to a single problem to learn. Another step in this task analysis under machining operation is stand on side of machine facing blade. How often have you people thought when you're teaching somebody to use the machine that there might be some good reason to specify, to require that each time they use it, before they ever reach, that they are in basically the identical position they were last time, before they reached? When people learn from exposure you don't give that a second thought, you don't have to think about it, you don't spend any time thinking about it.

We're talking about people with special needs. One way to define what you mean by special needs is that they're not people that are going to make it from exposure, that they need some training. Now, that brings us then to a next step. When you talk about training what you're talking about achieving is what we call cycle constancy. A cycle is one complete set of operations for a task. If my job is to sharpen the drill bit, I reach for the bit, pick it up, position it in my hand, turn on the stone, do what I have to do, place it over here. Then I reach for the next bit, I have started my second cycle. For most of the tasks that you want to teach and I'm zeroing in now on the work itself, we're not talking about the job placement aspects of career education or job preference, what we're shooting for is cycle constancy. To achieve that, begin by deciding, what a cycle is. What is it that you want constant?

I have another task analysis here written by Jose Morales, also in Vocational-Technical Education at the University of Illinois. This is a task analysis for disassembling and assembling a jack plane. In this task analysis he specifies, "hold the can using the left pointing finger and thumb. Point of finger should be placed under can, pressed outside of can firmly with thumb. Move left hand and grasp lever cap by the middle curved area moving it upward and out from screw." That sounds pretty fine doesn't it? There's another place where he said, "with right hand, wipe a rag." Take a rag that's tied to the bench and wipe it that's one of the parts of the cycle. When would you say to somebody I can't allow you to go ahead and do this task until between steps 4 and step 6 you reliably and consistently reach over and grab the rag? With most of the people you've trained the idea of getting down to that doesn't make much sense. There's a rag on the table, you either wipe your hands or wipe on your pants. His reasoning was, whether I was working with mildly or severely handicapped people, that after step 4 that hand has some oil on it. If following that step you don't get rid of the oil, then at step 6 you now get oil on everything that you didn't want it on. So he specifies as part of the cycle between step 4 and step 6 "wipe hand."

Then we talk about cycle constancy regardless of the learner, we're talking about arriving at a set of decisions that say, "this is precisely the set of moves, the set of operations that constitute the task." That's an important part of instructional technology, I think, for people who learn from exposure every bit as much as people who learn from training.

For the tasks you're talking about teaching, industrial arts, automotive shop, home economics, using a laundromat, using a washer and dryer, using a microwave oven, especially for those tasks that you people all know how to do so well, you'd better take a closer look. It turns out that we, with all these things we do, we have never become intimate with-completely understood those tasks.

You put on coats this morning. When you put your coat on this morning, how did you do it? Did you grasp at the lapel? You know interestingly enough, I'll bet none of you grabbed the coat so that the inside was facing away from you. If you want to teach somebody to put on a coat who just has no idea of a coat, you'd better be ready to figure out how you're going to get the label up instead of down, how you're going to get the inside of the coat facing you instead of facing away, how you're going to get your hands just in that right place on the collar, etc. etc. That's what we're talking about in training. And so while I'm being redundant I don't mind being redundant. The two most basic messages so far are: before I move onto some other things here, number 1: it's probably true that the data available will show that severely handicapped people are capable of doing things vocationally that few people have educable people doing right now in 1976. Piece of information number 2 is: that the ingredient that needs to be addressed much more than any other ingredient is how you teach. How do we get these people to the point where they are doing these things that they are capable of?

There is a problem. How do we get together on this. We have our organizational structures to deal with. You people in teacher training, the question has got to be asked. What are you doing to the people in your training that other people are not doing to regular teachers?

There was an article written, "What's special about special education?" That article was written how long, five years ago, six years ago or something like that, I still haven't been able to answer it. What's going to make it special is to say we can take people that have been through a conventional educational experience and accomplish what should have been accomplished before and wasn't.

In most of your states you have all sorts of fancy ways of certifying. You know how you ought to certify, if you take the definition of power seriously? "We're going to have levels of certification. Level 1 certification is for a teacher who has sufficient power to bring people to criterion who probably could have got there anyway. Level 2 certification is for a person that is able to accomplish the same thing as a level 1 teacher but with people that people have looked at funny and wondered. Level 3 certification is for a person that can accomplish exactly the same thing with individuals that everybody looked at funny because they weren't wondering, they knew that person was hard to train. Level 4 certification is for a teacher that can accomplish the same thing with somebody that just wasn't even allowed in the public schools until very recently. But what we should be holding constant that we're not holding constant is the idea that what they're going to learn is basically the same.

Some of you are saying, "I can't believe how naive." Steve Zuider went into a work activity center in Chicago. Now, some of you, I'm sure, are familiar with the concept of sheltered workshop, work activity center, day care center. A work activity center has people who voc-rehab won't sponsor. It often has teachers who say: "We ain't going to get anything out, so we won't put anything in." Why should we put money into their vocational rehabilitation when they are not going to be vocationally viable? And these people in this workshop, were doing one of the typical kinds of mickey mouse garbage things that you find in such places, which society thinks that's all they can do. Although it was actually a good one for that kind of a task. They were assembling spring loaded hinges. The hinges had an angled plate and the two plates had to go down, a spring had to be lined up, a pin had to be inserted, and some other operations had to be done. Their productivity was 15% of the industrial norm. That's what you'd expect from work activity center clients, something less than 50% and this was about 15% of industrial norm, where the industrial norm was decided by the factory where these hinges were made.

So what Steve did was a content task analysis, a process task analysis, and trained them. (Trained under very difficult circumstances by the way. Here they were doing a job, he then would then take them away 15 or 20 minutes a day, train them on the new method, then they'd spend the rest of the day back on the old method, that's not an easy way to teach somebody something.) When everybody was trained they shut down the line, set up the new line and away they went. My guess is by the way, that for most of the kinds of classes that you people work with and see you would never ever see one of these people there. These are people that up until very very recently would never be found in the public schools.

They then went into three months of data collection (three months of measuring) with no new staff. Steve accepted a job there, took the job which was floor supervisor running several different lines, took this one job and decided to try the system out. Over the three month period following training, the average productivity of that line was 100% of the industrial norm. 100%! If fluctuated between 92 and 110%. These were severely handicapped people that couldn't be funded by voc-rehab. The people in this work activity center with Steve were so impressed that they said, "you know, we better check these numbers out." So he went into the factory where the hinges were made, where they had given him the industrial norm. Steve went in with his own stop watch, and took a look at some normal people doing this normal job in this normal factory. He measured and looked at several of them and studied how long it took them to perform the cycle, to do the entire job. The average productivity in the factory was 85% of their industrial norm. So it's not an idle comment to talk about people acquiring skills.

Now you're going to say to me well what do you mean, these people could be nuclear physicists, of course, if they were just given enough power? I kind of doubt it. Are you laughing? I can't be any stronger than that. Are you going to tell me they don't have enough brain cells? Are you going to tell me they don't have enough synapses? All you can tell me is that it's not likely that our society will come up with the necessary resources. Are you going to tell me that it's not likely that we're going to have the right situation or are you going

to say, I know I could never be a nuclear physicist and if I couldn't-- certainly he couldn't. My reaction to that is, who says that you couldn't? Where have you ever been exposed to power? When have you ever been trained? Almost never, has somebody really trained you. Some of you may have had trouble learning how to drive and put your family through some terrible, terrible times before getting the license. Some of you, in order to get your degree, had to pass Biology II and you had tutor, after tutor, and finally slipped through with a D. Well, then maybe you've experienced a little of what I mean by training. Training is when you say to yourself, "This is the task to be known, this is the person who is to know it and when I'm done he will, and nothing short of that is acceptable." The more difficult it is for somebody to learn, the more power you should be ready to come up with.

Another result of our research is that the more difficult it is for somebody to learn something the more the trainer has to know about the task. Let me say that again. The more difficult it is for someone to learn something, the more the trainer must know about the task. That gives you a beginning look at my feelings about testing, doesn't it? You want a person to know how to do filing, what are you going to do--test him? What's testing going to tell you? Train them! Come up with a technology and instruction for teaching people filing. Look, go find out about filing. What does it entail? What do you have to know to file? Add when you know enough, whoever that person is when you're done, ought to know how to file. So, let me hold it there on those issues and go into some other things. But those are two things that I wanted covered, that I felt were very important.

I said I was going to say something about individualized instruction. A lot of people say to me, we can't do individualized instruction, there's no time! We don't have the resources! When you train the people that are going to teach courses in the public schools, what you should be telling them is, they shouldn't ask that question. They should be asking the question: "How can I give individualized instruction". Because for the people that you're going to find in the courses that you people are talking about, here in order to come up with sufficient power for them to learn you're going to need closer and closer relationships between the learner and the trainer. It's not easy to come up with a lot of power when you have 18 people out in front of you. You can come up with some but not very much.

When we're teaching someone who has found it difficult to acquire a task, I couldn't very well stand here and say all of you take your left hand and place it on the cover there so that your right hand could now grab the large paper clip which is over it. A lot of people we're talking about are going to go left, right, paper, what? Let's say that I trained them to be able to do what I do "Simon Says." I went like this (hold up right hand) and everybody put up their right hand and I went like this (hold up left hand) and everyone did that and I went like this (hold up right hand) and everyone did that for a lot of the things that I might want to teach them, I couldn't possibly inspect all of this row of people simultaneously to provide the kinds of feedback, the kind of information to them that would allow for appropriate learning and for cycle constancy at the same time. If you want to teach an individual that doesn't do real well with a lot of talking to him to operate a radio cell, better have some power folks! and I don't mean 220 either. You can't afford for him to make a lot of mistakes, that's not the kind of task where we say try another way.

I read you one letter about the mower task, I talked to you about the hinge jobs, I talked to you about task after task. It turns out that when you're working with people who find it difficult to learn and you organize yourselves in a way that you can do individualized instruction you take the same amount of time that you now spend and in less than that amount of time everybody learns, where the way it's done now nobody does. Once you've set your expectancy down low, not much is going to happen. You really don't have much of a job on your hands, you say to yourself, if they get this far in a year's time isn't that wonderful. On the other hand if you say to yourself, these are the 18 skills that this person will know at the end of this semester nothing short of that is going to make me happy, you'd be surprised what this same teacher with the same load of kids, the same amount of resources can accomplish.

Now that brings us to another point, one of the nice buzz words nowadays, mainstreaming. Most places where I see mainstreaming occurring it's a far more severe form of segregation than what we used to do. When you put a person in a circumstance where no one pays any attention and we call that integration? Like when a white individual moves into an all black neighborhood and says "I've integrated the neighborhood", nobody talks to him, nobody goes over, that's integration? That's segregation. Integration suggests that something more than geography is happening. If we're going to talk about mainstreaming, if we're going to talk about individuals, with one set of characteristics finding themselves now with individuals with other characteristics we can't call it mainstreaming unless something happens. So if we want to bring people in (you'll see why I'm talking about this--after talking--about individualized instruction) one of the things we'd better do that we haven't done is to let teachers know that we're not talking about two sets of criteria in the classroom if we really mean mainstreaming. If you really mean that from now on these guys with "special needs" are going to be with these guys without "special needs" then what you ought to be meaning is that at the end of the course at the end of the semester they'll all have everything--not we sure hope he's nice or he gets through all right at the end or nobody gets bothered. And one way that that can happen is for teachers to recognize that the differences in instructional technology that is required for special needs students will in fact benefit those students who learn from exposure. Organizing training sure doesn't hurt anyone. Chances are that most normal kids in voc-tech classes could acquire far far more than they now acquire much more efficiently, much more accurately, much more usefully if the teaching had more organization.

Incidentally there are many task analysis systems and when we use the expression task analysis the way we use it we are talking about a whole variety of systems for analyzing tasks. There are many others, for instance, Richard Anderson here at the University of Illinois has a system he has developed and he calls it task analysis. It was developed with the normal elementary school individual learning academics in mind and it's a very, very comprehensive, thorough, and effective system. It has some things in common with our system and some things that are different. When you hear somebody say task analysis, don't think they're talking about the same thing somebody else is talking about when they use the expression.

Most task analysis systems are talking only about content task analysis. Content task analysis in our system is defined as analyzing the task itself. It's what is actually done in order to accomplish the task. A task analysis for putting on a shoe would be nothing about the learner, rather it's how to put on a shoe. It's some inside and outside grasp, it's a move over, it's a lifting of a foot; it's a lifting of the foot on the heel, it's a placing of the hand on the toe etc. The content is the task.

The process task analysis is: "how are you going to teach it?" In our system process task analysis has two major sub-components that we call format and feedback. Format is how you present the material. For instance, if you're teaching a person what we call multiple pieces of learning that are sequenced, like how to operate a tape recorder, there are several formats for doing this. I could use a backward chaining procedure - I could teach you the last step of the task until you know it, then the next to the last step until you know it, then the next to the last until you know it--that's backward chaining. I could teach you using a forward chaining format - I teach you the first step of the task until you know it, then the first two steps until you know them and so forth. I could use what we call total task format. I put you through the entire operation every single time and I correct errors as they occur so that what happens over trial is that instead of you getting a little more as you learn what you get is fewer errors and less feedback over time. If I want to teach you single pieces of learning, like this thing is called a jack plane, and this is called a router, I could use a paired-associate learning format. For example, I have the object with a card in front of it and you look at the object and you say "that's a router." Then you look at the other side of the card--no it's a jack plane. You try to associate, you look at it and try to remember the name that goes with it and then you check your answer. Then after a while you say "that's a router." And you look and sure it is a router and you have learned. I could use a match-to-sample procedure. Match-to-sample format is showing a picture of a router. Then showing you four pictures, one of which is that same router. I say which one of these down here is like this one up here. It's a whole different kind of format. That's one sub-section of what we call process task analysis which is how the teacher lets the learner know what he wants and if he's achieving it.

The second part is what we call feedback. Feedback is how you let the learner know how he's doing. This would include things like color coding something, like using verbal feedback, using non-verbal feedback. In our system reinforcement are synonymous, but we say that reinforcement is only one small category. If we simply let the learner know the results of his responses, we are providing little if any reinforcement. We can also let the learner know where we want his hands and fingers to go by using our hands to move their hands. This is a very sophisticated form of feedback in that it provides the learner with information that allows self correction later on. As we reduce the amount of feedback (and we reduce it rather quickly), the learner is forced to perform more and more of the task by using information we provided earlier and by making his own decisions about the task.

Ten or fifteen years ago, the tools of the special needs teacher were patience, understanding and a "feeling" for the slow learner. The parents of these children and young adults could not and did not ask for more than patience and love. It is a different story today. Parents are demanding rather than asking for service. They, like parents everywhere, are asking for a place in this society for their children. In 1976, in light of new instructional technology, the demand is a reasonable one.

Professional Task Analysis Activity

Purpose

This activity, which is described in greater detail in Section II, was included in the workshop for basically two reasons. First, it was recognized that teacher educators need a common base from which to develop the instructional content of teacher education programs. In keeping with the growing interest in competency-based teacher education, it was felt that the major "tasks" performed by local educational agency personnel offered an operational framework for reviewing the contemporary knowledge and skills needed by teachers, counselors, and work coordinators. Second, the wealth of special needs background and programming experience brought by the participants was considerable, and offered an excellent data base for synthesizing a general list of tasks needing to be emphasized in joint vocational and special teacher education programming. A synthesized list of professional tasks from this group would be useful to other professionals who are responsible for the development of inservice or preservice teacher education programs.

The Activity

In the afternoon of the first day of the workshop the participants were given a fifteen minute overview of the professional task analysis activity. Following the overview, the participants assembled in their preassigned groups. Each of the five groups of ten to twelve participants was composed of vocational and special educators from the different universities in attendance. The project directors and coordinators each acted as group leader/facilitator.

After each participant had completed the questionnaire a group discussion was initiated. The initial purpose of the discussion was to generate some consensus of agreement within the group regarding which of the tasks were most important and/or least important for consideration in personnel preparation programming. As the group discussion continued it soon became apparent that because of the diversity of teachers education programs represented, arriving at a meaningful consensus would be extremely difficult. The group discussions did, however, provide an excellent opportunity for the participants to share their approach or planned approach to preparing vocational special needs personnel to perform several of the tasks listed on the questionnaire.

Instrumentation

An instrument (see Appendix A) which contained 49 professional tasks was developed and field tested prior to the workshop. The 49 tasks were classified somewhat arbitrarily into four major function categories: (1) assessing program and learner needs, (2) planning instruction, (3) implementing instruction, and (4) evaluating program and instruction.

Several competency identification studies from the fields of vocational and special education were reviewed prior to the workshop in the process of assimilating and editing the list of 49.

The project staff identified three major questions which the participants responded to individually and collectively in completing the instrument during their small group session. Prior to any group discussion, each participant was asked to consider the following three questions from a local educator's point of view (vocational teacher, special education teacher, or counselor):

1. What is the relative amount of time you would be likely to spend conducting this task? (0 - blank - do not perform, 1 - very little time, 7 - a great deal of time).
2. How critical would successful performance of this task be to the overall effectiveness of your program? (1 - unimportant, 5 - important, 5 - extremely critical).
3. As a local educator working with special needs students, to what extent would you need to know more about this task? (1 - none, 3 - a bit more, 5 - much more).

These questions were drawn from a review of several task or competency validation studies in which the principal objective was to analyze a job or professional role for the purpose of training others to successfully perform in that role. In doing career or role analyses, several researchers have been concerned with the amount of time spent on certain tasks by the teacher, counselor, or work coordinator during the normal performance of his/her duties. Another important consideration is the importance or criticality of one task to another. Some tasks may require relatively little time to perform (e.g., modifying instructional equipment for handicapped students), but are extremely critical to the overall effectiveness of the instructional program. The final validation question asked was concerned with whether or not educators who were in-service perceive a need to further develop their competency in a particular task. This question is especially important in considering the development of graduate-level, inservice programs. In general, it is reasonably important for practicing teachers to perceive themselves as needing to upgrade their abilities in a particular area before major changes can actually be initiated through inservice programs.

Analysis of Data

The data of major importance in this analysis appeared to be the mean scores and ranks for the tasks which the participants rated the highest in terms of criticality to overall program effectiveness and the perceived level of interest of local educators in knowing more about the task. Summary data describing the relative time spent performing the tasks are not presented here because their generality is limited. Their value is significant, however, for school districts and state departments of education in analyzing the amount of time vocational teachers or other professionals in specific roles actually spend performing certain tasks related to programming for special needs learners.

One must remember that the data accumulated in the professional task analysis activity are somewhat limited in their specificity. For example, the role assuming directions did not specifically ask the respondents to consider themselves responding as teachers, administrators, or work coordinators, but only as vocational educators, special educators, or counselors. Neither was a specific focus provided for different instructional settings or levels (e.g., junior high school, senior high school, area vocational center, sheltered workshops, or community colleges). The project staff chose not to delimit the focus of the activity so as to concentrate on identifying those tasks which are most important to training special needs personnel across the board. So far as we could determine, this information describing the general competencies needed by personnel is not available in the literature. The research to date has emphasized role specific competencies (e.g., work adjustment counselors or resource room teachers).

A 5-point criticality scale was used and the means ranged from a low of 2.65 to a high of 4.44. Twelve of the 49 tasks received mean criticality ratings greater than 4.0 and were considered highly critical. A 4.0 cutoff was selected to identify tasks of major criticality because it was equidistant on the scale between "3" (important) and "5" (extremely critical). A 3.5 mean cutoff was selected for the area of need scale. This cutoff identified nine tasks from the 49 as being tasks in which teacher educators feel local educators perceive themselves as needing to improve.

Table 1 on the following page lists six tasks which were highly rated in terms of both criticality and perceived area of need for additional information. The mean ratings as well as the ranks are provided. It is apparent that the most critical task with which educators must concern themselves is identifying instructional methods or techniques that work with the special needs student. It also appears that ongoing evaluation for the purpose of improving instruction is a task that is of major importance. When both the criticality and perceived need questions were considered jointly these two tasks and their related competencies stand out clearly as being of major importance in the personnel preparation process.

Another group of four tasks also appears to be quite important. Within this group there is again a strong reflection upon tasks directly related to providing instruction. Developing, selecting, or modifying instructional materials and planning sequences of instructional units all rated relatively high in both criticality and perceived area of needed inservice instruction. However, the most important task in this group of four has to do with "analyzing students' occupational interests and aptitudes." Although this is the only task in the top six which emphasizes assessment, it is obvious that special needs educators must have some degree of competence in assessing the individual students' interests and aptitudes if students are to be prepared for an occupational life role.

Table 1
Highly Rated Tasks from the Professional
Task Analysis Activity

| Professional Tasks | Criticality ¹ | Perceived ¹ Area of Need |
|--|--------------------------|---|
| | (\bar{x} >4.09) | (\bar{x} >3.50) |
| 2.13 Identify instructional techniques appropriate for special needs learners | 4.44(1) | 3.81(2) |
| 4.07 Evaluate and upgrade the effectiveness of instruction | 4.13(3) | 3.91(1) |
| 1.04 Analyze students' occupational interests and aptitudes | 4.11(6) | 3.76(4) |
| 2.09 Plan a sequence of modules or units of instruction according to the learner's needs | 4.11(6) | 3.57(5) |
| 3.10 Develop instructional materials for special needs learners | 4.11(6) | 3.50(8.5) |
| 3.09 Select or modify instructional materials appropriate for different special needs learners | 4.09(9) | 3.50(8.5) |

¹Ranks are in parentheses

Section II of this report provides a more detailed analysis of the professional task data collected during the workshop, as well as the comparative data collected from local school personnel prior to the workshop.

Team Action Planning Sessions

During the last two days of the workshop approximately eight hours were devoted to the development of institutional action plans by the participating teams. The action planning sessions followed the charges and program presentations, and afforded each team an opportunity to discuss, debate and brainstorm the future directions of their teacher education programs. Each team was asked to submit a written plan before noon on the last day of the workshop. The plan was to include: (1) a brief program needs assessment statement, (2) short and long term action plan objectives, (3) short and long term strategies for attaining the objectives, (4) the resources needed to implement the plan, and (5) the anticipated observable outcomes. In the resources section of the plan, the team was asked to include a budget for the expenditure of \$400.00 of follow-up funding to be provided by the national workshop project.

During the action planning sessions members of the project staff and steering committee were available to consult with the teams regarding the development of their plans or other pertinent concerns.

The format outline for the institutional action plans is presented in Appendix B.

Resource Materials Display

The evaluation and planning concerns opinionnaire which was circulated in November, 1975 to the prospective workshop attendees indicated a strong concern for reviewing and exchanging resource materials that were pertinent to the preparation of vocational and special education personnel. Materials were collected from the libraries of the project staff and other individuals having an interest in vocational and special teacher education. A letter describing the workshop and requesting materials was sent to the Special Needs Coordinators in the vocational education state offices in all fifty states plus Puerto Rico, Guam and the Virgin Islands. In addition, the letters in the pre-workshop participant information packets encouraged all participants to bring and share any descriptive materials or publications they had developed. Well over sixty resource materials were included in the display, which was open for viewing from 8:00 a.m. until 5:00 p.m. each day during the workshop.

Since most of the materials were not available in quantities for distribution to the participants, a bibliography of all the displayed materials was compiled. This bibliography, which is included in Appendix C, was distributed to all workshop participants, as well as non-selected applicants shortly after the workshop.

Evaluation of Workshop Activities

The evaluation of the workshop activities was done in three major sections. After the Professional Task Activity the first afternoon of the workshop participants were asked to respond to a questionnaire evaluating the session. At the conclusion of the workshop each participant was asked to respond to a team meeting questionnaire and a general workshop evaluation instrument. The discussion of these evaluations follows.

Professional Task Analysis Activity

A brief questionnaire containing eight questions was developed by the evaluator and distributed to each of the groups at the completion of the activity. Table 2 presents the summary data for four of the questions. The instrument is presented in Appendix D.

The major goal of the activity was to develop a list of major tasks performed by local school personnel who are responsible for serving special needs students enrolled in vocational education programs. Approximately 60% felt the goal had been achieved, 23% were undecided, and 18% felt it wasn't achieved. There appeared to be some confusion regarding the orientation to the activity because 41% either agreed or strongly agreed that a clear explanation was not provided. Approximately one third of the group adopted a "wait-and-see" attitude with regard to the value of the activity for developing their action plans. The informal comments and questions five and six appeared to suggest that approximately 25% of the group felt too much time was provided for the activity, and that the groups were too large.

Several interesting, informal comments were also provided by the respondents regarding the perceived value of the activity. Several felt the questionnaire was complex, leading to some confusion. Others indicated a concern for being asked to role play a local educator, and had difficulty visualizing the relevance of such role playing in terms of developing or improving teacher education programs. Several suggestions were offered that indicated perhaps the groups would have functioned more effectively if homogeneous groupings (e.g., institutional teams, or all vocational education, special education, etc.) would have been used instead of the random grouping. The comments also seemed to reflect concern over the semantics of task statements, and the lack of a common language between vocational and special education. Overall, it appeared that following the activity nearly everyone had a number of suggestions for improving it, and very few comments were found to suggest that the participants felt it to be a beneficial experience.

Table 2
Summary of the
Professional Task Analysis Activity

| Evaluation Question | \bar{X} | 1 SA % | 2 A % | 3 U % | 4 D % | 5 SD % |
|---|-----------|--------------|-------------|-------------|-------------|--------------|
| The main objective of the Professional Task Analysis Activity was fully achieved. | 2.56 | 8 | 51 | 23 | 13 | 5 |
| The orientation to the activity did <u>not</u> clearly explain what was to be accomplished. | 3.08 | 10 | 31 | 8 | 43 | 8 |
| The workshop staff member in my group provided valuable assistance for the completion of this activity. | 2.07 | 22 | 61 | 7 | 8 | 2 |
| This ordinarily will <u>not</u> be very beneficial in developing the "action plans". | 3.10 | 11 | 16 | 34 | 26 | 11 |

Team Meetings

A team meeting evaluation questionnaire was developed by the project evaluator in conjunction with the workshop project staff. The questionnaire appears in Appendix E. The purpose of the questionnaire was to obtain evaluative information about the team meetings and their relation to the development of the action plan. In addition, information was obtained about various factors affecting the process of meeting as teams to develop action plans. A summary of the data appears in Table 3.

Concerning the orientation of the activity, almost 92% indicated agreement that the orientation clearly explained what was to be accomplished during the team meetings.

A guideline for developing the action plans was constructed in advance by the workshop staff. The participants were asked about the ease with which the guideline could be understood and followed. Almost 85% indicated that the guideline was easy to follow and readily understandable. Only 4% voiced disagreement with the statement and 10% were uncertain. Apparently the majority encountered few problems with the guideline in developing their action plans.

Table 3

Evaluation Summary of the
Team Meetings

| Evaluation Question | \bar{x} | 1 | 2 | 3 | 4 | 5 |
|--|-----------|------------|------------------|----------|-----------|------|
| | | SA | A | U | D | SD |
| | | % | % | % | % | % |
| The orientation to the activity clearly explained what was to be accomplished. | 1.83 | 25 | 66.7 | 8.3 | 0 | 0 |
| The guideline for the action plan development was easy to follow and understand. | 1.81 | 37.5 | 47.9 | 10.4 | 4.1 | 0 |
| The team meetings would have been more productive <u>without</u> workshop staff assistance. | 3.67 | 0 | 6.3 | 33.3 | 33.3 | 16.7 |
| The three "model program" presentations provided valuable information for completing the action plans. | 3.47 | 0 | 20.8 | 2.5 | 31.3 | 16.7 |
| The printed and visual resource materials describing other programs were <u>not</u> very valuable for completing the action plans. | 2.69 | 14.6 | 39.6 | 16.7 | 20.8 | 8.3 |
| The list of professional tasks provided valuable information for developing the action plan. | 3.31 | 4.2 | 31.3 | 18.8 | 20.8 | 25 |
| | | <i>Yes</i> | <i>Uncertain</i> | | <i>No</i> | |
| Would changing the composition of your team have improved the development of your action plan? | 5.00 | 0 | | 0 | | 100 |
| A comprehensive and feasible action plan. | | | | <u>N</u> | | |
| • Has not been initiated by my team | | | | 1 | | |
| • Has been initiated by my team | | | | 13 | | |
| • Has been developed by my team | | | | 30 | | |

Workshop staff were available for consultation during the team meetings if desired. However, few of the teams requested the specific involvement of the staff. Each of the five staff members was assigned to monitor and "check in" on two teams periodically to see if there was anything that was needed, but were directed not to stay unless invited to do so.

Only 6% of the team members felt that their meetings would have been more productive had they not had workshop staff assistance but a large percentage (33%) were undecided. Overall, the assistance provided was viewed positively by about half of the teams.

During the workshop, presentations were made by individuals who already had programs in existence related to training of vocational and special education personnel. A question was asked about the value of these presentations in completing the action plans. Forty-eight percent indicated the presentation did not provide valuable information for completing the action plans, and another thirty percent indicated uncertainty or did not answer. Apparently many individuals did not feel the presentations of the three exemplary programs provided much assistance in developing their action plans.

A question was asked concerning whether changing the composition of the teams would have improved the development of the action plans. One hundred percent of the respondents indicated that this would not have improved the development of their plan. This probably indicated that team members felt that their team had functioned effectively.

An overall question was asked about the stage of development that the action plans had reached. Overall, sixty-three percent indicated that they felt a comprehensive and feasible action plan had been "developed," twenty-seven percent indicated the plan had been "initiated," and only one person (two percent) indicated that an effective plan had not been even initiated.

A question was asked about the main factor(s) which contributed to the development of the team's action plans. Two main reasons appear to be dominant after categorizing the comments: (1) the cooperative effort put forth by the teams, and (2) the pre-planning and work done prior to the workshop. Several of the comments were quite enlightening. A representative sample is provided below:

Comments concerning cooperative effort:

"Cooperative input and effort by various disciplines toward a common goal"

"The opportunity to 'retreat' to Illinois to work together, plus the reinforcing effect of others in the same situation"

"The members of the team and having a person from the State Department as a member of the team"

"Cooperative attitude of the team"

"Total team effort and commitment"

Comments concerning pre-planning and work:

"Planning and research prior to this meeting with modification of plans possible after hearing other plans"

"Our prior state of readiness--the conference supplied the stimulus for two departments to get it together"

"A belief in the need for such a plan prior to attending, and an excellent working relationship established prior to conference"

These comments appear to reflect achievement of some of the objectives of the workshop. The workshop staff had hoped to establish a cooperative spirit and working relationship between special education and vocational education teacher educators. From the comments in general, it appears that this objective was accomplished.

Overall Evaluation of the Workshop

At the conclusion of the 2 1/2 day workshop the participants were each asked to complete a fairly extensive overall evaluation instrument (see Appendix F for the instrument). This evaluation form was also developed by the project evaluator in conjunction with the project staff. The primary purpose of the overall evaluation was to assess the effect of the workshop upon the participants, and to collect information regarding the strengths and weaknesses of this type of inservice education for teacher educators. The latter was viewed as critical for planning the follow-up activities, as well as helpful to others who may contemplate using workshops as a way of generating change in teacher education.

A series of agree-disagree and open-ended questions was answered by the sixty-two respondents. Table 4 presents the summary data for the questions for which a specific response was required. The initial, major question asked the participants to indicate the extent to which they felt the major goal of the workshop (to develop feasible and functional action plans for each university) was achieved. Approximately sixty-five percent of the respondents felt that that goal had been highly achieved. Twenty percent felt it had been somewhat achieved, while nearly twelve percent felt that this goal had not been achieved.

A series of nine specific questions followed which was concerned with assessing various key aspects of the workshop. Over seventy-five percent of the respondents indicated that the workshop held their interest, and that the objectives were clear to them. Sixty-five percent felt that there

Table 4

Summary of Responses from the
Overall Workshop Evaluation

| Evaluation Question | \bar{x} | 1 | 2 | 3 | 4 | 5 |
|---|-----------|---------------------|----------------|--------------------|------------------|-----------------|
| | | Extremely Well % | Very Well % | Some- what % | Very Little % | Not at all % |
| To what extent was the general objective of the workshop accomplished? | 2.25 | 16.7 | 50.0 | 20.0 | 10.0 | 1.6 |
| | \bar{x} | 1 SA % | 2 A % | 3 U % | 4 D % | 5 SD % |
| The workshop held my interest. | 2.21 | 17.7 | 59.7 | 8.1 | 12.9 | 1.6 |
| The objectives of the workshop were <u>not</u> clear to me. | 3.94 | 1.6 | 14.5 | 8.1 | 40.3 | 35.5 |
| The objectives of the workshop were realistic for the time allotted. | 2.27 | 21.0 | 45.2 | 17.7 | 9.7 | 3.2 |
| There was not enough time for informal discussions during the workshop. | 2.39 | 25.8 | 40.3 | 8.1 | 21.0 | 4.8 |
| A similar future workshop should be longer in amount of time. | 3.39 | 8.1 | 14.5 | 22.6 | 37.1 | 16.1 |
| The facilities (meeting rooms, etc.) for the workshop were adequate. | 1.79 | 41.9 | 48.4 | 0 | 8.1 | 1.6 |
| The workshop was <u>not</u> well organized. | 3.90 | 0 | 14.5 | 12.9 | 38.7 | 32.3 |
| Not enough of the participants' time was spent in the evaluation of the workshop. | 4.05 | 1.6 | 3.2 | 9.7 | 54.8 | 29.0 |
| The scope (coverage) of the workshop was adequate. | 2.65 | 9.7 | 45.2 | 16.1 | 29.0 | 0 |

was not enough time permitted for informal discussions, and only about half of the participants (fifty-five percent) felt that the scope (coverage) of the workshop was adequate, but more than fifty percent felt that future workshops of this type should not last longer than 2 1/2 days.

Each of the presentations made during the workshop was also evaluated. The impressions left on the participants by individual speakers appeared to depend largely upon both the message and the style of delivery. There was no discernible positive or negative trends in the evaluation of the "charge" presentations as opposed to the "program" presentations. However, the presentations which appeared to have the greatest impact upon the participants were those delivered by Marc Gold, Roman Pucinski, Donn Brolin, and Elizabeth Marion.

When asked to identify one or two of the major personal benefits gained as a result of participating in the workshop, fifty-five comments were received. These comments of personal benefit were classified into five major categories:

1. Interaction among professional personnel with similar interests.
2. Learning more about other institutions' programs.
3. Knowledge, general insight into materials and techniques related to this field.
4. Understanding more about vocational education and special education.
5. Having the opportunity to meet with own team.

The most frequently mentioned benefits were in the first two categories. Several comments taken directly from the evaluation instruments are presented below:

Interaction among professional personnel with similar interests:

"Meeting people with similar interests"

"Getting acquainted with others in both fields"

"Meeting with other people with vocational education/special education commitment"

Learning more about other institutions' programs:

"Learning more about other programs"

"Comparison of our program and problems with those of others"

"Gaining insight into other programs"

"Getting information about programs in operation"

A similar question was asked regarding the benefits that were perceived as occurring to their respective institutions as a result of participating in the workshop. Ninety percent of the team members responded positively to this question, and generally offered comments that could be classified as follows:

1. Better cooperation and communication between vocational and special education faculty members.
2. Improvements in the existing program(s) for preparing vocational and special education personnel.

Several representative comments from these two categories are provided below.

Better cooperation and communication:

"Developed a close working relationship with various different department personnel"

"Movement toward cooperative efforts on campus between vocational education and special education"

"Cooperation between two departments in different schools"

"A closer working relationship between special education and vocational education"

"Better cooperation, communication, and understanding between special education and vocational education"

Improvements in the existing programs:

"Closer coordination between existing program and efforts to expand and improve programs"

"Changes in teacher education programs"

"Efforts to meet needs of special needs teachers"

"It will broaden the scope of my institution and help further my institution's objectives."

When asked to identify the one or two major strengths of the workshop, over fifty comments were provided. After classifying the comments, six major categories were identified:

1. Presentations
2. Workshop planning and organizations
3. Interaction and exchange of ideas

4. Team approach
5. Joint vocational and special education involvement
6. The location (away from home)

The presentations were the most frequently mentioned strength. The workshop organizational efforts were also frequently mentioned. Representative comments describing the presentations included:

"Some good presentations and materials relevant to the problem"

"Most presenters were high level."

"Some outstanding 'stimulus' speakers"

Specific examples regarding workshop planning and organization:

"Well organized"

"Well planned"

"Well designed to cover the materials necessary to participants for accomplishing task of designing a workable plan"

A similar question regarding the major weaknesses of the workshop yielded a total of fifty-six comments. Comments from this question were classified into four categories.

1. Presentations
2. Limited amount of time for interaction and discussion between and within teams
3. The professional task analysis activity
4. Lack of variety of activities

Specific examples regarding the presentations:

"Too abstract and too much theory in several of the presentations"

"The way some of the material was presented"

"Formal 'model program' presentations"

Specific examples regarding time for interaction:

"Time was not provided for team interaction with other teams."

"I think we could have had more interaction between institutional teams."

"Not enough time set aside for discussion"

It is interesting to note that comments relating to the presentations rated first in total for both strengths and weaknesses. This may be indicative that the participants have individual likes and dislikes and that the teams were at different stages of development in terms of their university program, as was the case. It would be natural to expect that mixed comments would be received if some participants were more familiar with information about vocational education for special needs students than other participants. For this reason, these responses may not necessarily be contradictory or meaningless.

The final and perhaps most crucial question was whether or not the participants would recommend participation in future workshops of this type to their colleagues. Fifty-four or ninety percent of the participants responded in the affirmative while one was uncertain and five (eight percent) indicated they would not recommend that their colleagues attend a similar workshop.

This section has described the participants' reactions to the workshop during and immediately following its completion. The evaluation efforts, just as the project efforts, did not end here, however. Data and evaluative information regarding several of the workshop activities were collected in June, 1976--six months after the workshop. This information is presented in a later section entitled Follow-up Evaluation and offers some interesting reflections on the long term worth of several of the workshop activities.

PRE-WORKSHOP PLANNING

This section is designed to provide the reader with an overview of the activities which occurred prior to the workshop in this project. Included in this section is a description of the: (1) steering committee's role in planning the workshop, (2) process and criteria used for selection of the participating universities, (3) the planning and evaluation concerns survey, and (4) the development of the State-of-the-Art document.

Steering Committee

Purpose

The steering committee was designed to play an important part in workshop planning. Since the workshop was designed for national impact, it was important that individuals with knowledge about the needs and programs across the nation be available for the planning. There was also a desire to have the workshop reflect the federal government goals for special education/vocational education personnel preparation. This was insured by including people with this knowledge on the steering committee. Developing a continuing commitment to the vocational education of special needs students was also of importance to the project staff. With this in mind the Bureau of Education for the Handicapped and the Vocational Education Personnel Development Branch of the U.S. Office of Education, and the Council for Exceptional Children and American Vocational Association were all invited to send representatives to serve on the steering committee. The steering committee is listed in Appendix O.

Meeting

The steering committee met September 25, 1975 as part of the workshop planning period. This meeting included a discussion of the project goals. It was suggested that workshop policies should, whenever possible, encourage continuing development in vocational/special education.

The method for selecting institution teams was discussed at length. It was decided that mini-proposals would be used as a means of obtaining the information necessary for selecting the teams. Forms asking for mini-proposals were distributed to universities through each state's Education Professions Development Act (EPDA) coordinator in the state department of vocational education.

It was agreed that selection of teams was to be based primarily on two criteria. Each of the ten Department of Health, Education and Welfare (D.H.E.W.) regions was to be represented. Also, a planned variation in program type was desired. Since the purpose of the workshop was to report eventually on model programs, the project staff and steering committee were extremely interested in selecting a wide variety of program types. It was recommended by the steering committee that a state office of education person be included as a fifth member of each team in order to contribute to the continuity and implementation of state plans for preparing special needs personnel. The steering committee stressed that no observers should be allowed at the workshop.

The project staff presented a tentative program schedule to the steering committee. This program included challenges from the vocational education perspective (Dr. Rupert N. Evans), special education perspective

(Dr. Gary M. Clark), and the perspective of the local school (Elizabeth Marion), as well as program presentations by the University of Kansas, Habilitation Personnel Training Project and University of Missouri's Project PRICE (Programming the Retarded in Career Education). Also on the program was a small group, task analysis activity designed to help the teams assess the competencies needed by special and vocational educators. This tentative program was approved by the steering committee with the suggestion of additional time for team meetings.

Several of the steering committee members were able to attend the workshop in January, 1976, and participate in the non-team activities. They did not, however, meet together as a group during the workshop. They served the workshop as resource personnel, and were available for input if any teams so requested. Those members representing governmental agencies were important to the communication between the universities and their respective agencies.

Contribution

As expected, the contribution of the steering committee to the project was of two principal types: (1) because of their background of experience they were able to suggest a number of excellent persons for the workshop program, and (2) they provided a validation of the program planning activities. Although few changes were made in the proposed workshop program it incorporated numerous suggestions made previously by individual steering committee members.

One notable omission from the steering committee membership was representation of Local Education Agency (LEA) staff in both vocational and special education. This was noted by workshop participants and steering committee members themselves, and no justification could be provided for this omission. Whether or not the program would have been different if LEA's had been represented on the steering committee is problematical, but the face validity added would justify their inclusion. Future workshops should include LEA staff on their steering committees.

The steering committee also played a useful role during the workshop. As changes in the program were suggested by participants or project staff, these were checked with steering committee members, and accepted, modified, or rejected in the light of their advice. The project staff would not consider offering a workshop of this type without the advice and support of able, experienced, and dedicated steering committee members.

Selection of Participants

Purpose

The mini-proposal approach for selecting participants for the national workshop was used for three reasons. First, it was a way to get vocational and special teacher educators together and to initiate planning before the workshop. In order to be considered, the university or consortium of universities was required to have vocational educators and special educators jointly involved in the preparation of the mini-proposal. Since one of the purposes of the workshop was communication among personnel from these two fields, it was felt that the mini-proposal would be a good beginning. It also provided an impetus for communication and program development at all universities interested not just at those eventually selected.

Second, the mini-proposal gave each team a basic plan from which to develop action plans at the workshop. Most teams expanded or changed their original mini-proposal, but they all drew upon their initial planning during the workshop. In such a short period of time (2 1/2 days) it would have been unreasonable to expect a team to formulate and refine the total action plan.

Third, the mini-proposal was a means of determining the types of programs that were either in the planning or operational stages. This information enabled the project staff to select representatives of a wide variety of university team approaches for preparing special needs personnel.

Mini-Proposal Description

The mini-proposal form, which was two pages in length plus a cover sheet (see Appendix G), contained five basic parts: I. Program Objectives, II. Program Design, III. Workshop Participation Expectations, IV. Prospective Attending Team, and V. Supportive Statement. A brief Mini-Proposal Development Guide was also prepared to assist individuals or teams in developing their proposals. This Guide is presented in Appendix H.

Each team was to include at least one vocational and one special educator. The vita of each team member was also requested. This was done in order to determine the individual's past work in and commitment to vocational education for special needs students.

The last section of the mini-proposal requested at least one statement from a dean or chairperson describing administrative commitment to the project. The project staff was concerned that the participating teams have a long term commitment to vocational education for special needs students so that the program development or expansion efforts would not end with the conclusion of the workshop involvement.

Dissemination

The mini-proposal forms and development guide were distributed under a general cover letter (Appendix I) from the project co-directors which described the goals of the project and provided other background information regarding the workshop.

Universities received the mini-proposal forms in one of two ways. Approximately fifteen mini-proposal forms were sent directly to individuals who requested them as a result of announcements in the American Vocational Journal, or had "heard about the workshop" from colleagues. The remaining 250 forms were sent to state EPDA coordinators. These individuals were asked to distribute the forms to vocational and/or special teacher education institutions in their state. By the November 7, 1975 cutoff date seventy mini-proposals had been received from thirty-two states. Table 5 presents a summary of the number of proposals received by U.S.O.E. region.

Table 5

Mini-Proposals Received by U.S.O.E. Region

| Region | No. Received Mini-Proposals | No. of Different States Submitting Mini-Proposals |
|---------------|--------------------------------|---|
| I | 7 | 4 |
| II | 5 | 2 |
| III | 5 | 2 |
| IV | 13 | 6 |
| V | 12 | 5 |
| VI | 5 | 2 |
| VII | 7 | 3 |
| VIII | 3 | 3 |
| IX | 8 | 2 |
| X | 5 | 3 |
| <i>Totals</i> | 70 | 32 |

Review and Selection

This process was, by far, the most difficult activity in the entire project. All but approximately five of the proposals reflected a strong, cooperative and continuing commitment to preparing personnel to better serve special needs students through vocational programming. It is indeed regrettable that funding did not permit the selection of sixty-five universities instead of ten.

As the mini-proposals were received they were reviewed and categorized according to the following criteria: (1) new or established program, (2) program type (inservice, preservice, workshop, degree program, formal course, etc.), (3) population served (e.g., special education teachers, vocational teachers, coordinators, counselors, or administrators), (4) single university or consortium, and (5) U.S.O.E. Region represented.

The entire project staff reviewed all mini-proposals and together selected the teams to attend the workshop. This process was begun by reviewing the regions from which there were the fewest proposals to select. Teams from the larger regions such as Regions IV and V were selected last. The planned variation method of selection eliminated a large number of proposals. In view of the high quality of the great majority of proposals submitted, it was fortunate (from the standpoint of the project staff) that planned variation sharply reduced the number of choices to be made on the basis of proposal quality.

Table 6 identifies the universities selected, and the planned variation criteria which were used in classifying the programs described in the mini-proposals. Eight of the universities offered both inservice and preservice programs while the remaining two (Pittsburgh and Missouri) emphasized inservice and preservice programs respectively. Five of the programs were considered to be in the planning stage, while three had at least one established on-going program. Three consortium arrangements were selected, and the balance were single institutions. The different populations for which the training was being provided was the final planned variation criterion.

Evaluation and Planning Concerns Survey

Following the steering committee meeting and the selection of the participating institutions, an evaluation and planning concerns survey was developed by the project evaluator. There were two purposes in developing and distributing the survey opinionnaire to the prospective participants, presenters, steering committee, funding agency personnel, and project staff, and a limited number of non-selected teacher educators. First, the opinionnaire was intended to assist in determining the information needs or desires of the various audiences that would be reading the project's final report. This information was viewed as helpful to the planners and to the evaluator in focusing the evaluation on the major concerns held by prospective readers and users of the final report. Second, the opinionnaire provided information that was useful to the project staff in planning the workshop and follow-up activities. The summary tabulation from the survey pointed out areas of anticipated importance during the workshop.

Table 7 presents the summary data from the opinionnaire. The instrument, which was developed by the evaluator and the project staff, is presented in Appendix J. A total of seventy-six copies were distributed and fifty-seven were returned (seventy-five percent). As shown in Table 7, twenty-nine specific concerns in four major areas were included on the instrument. Respondents were also able to list additional concerns in each of the four areas: workshop input, workshop process, workshop outcomes, and workshop impact.

In consultation with evaluation specialists at the University of Illinois, decisions were made in regard to which concerns should be focused upon for evaluation. These items were also considered as most important aspects of the workshop.

In terms of workshop input concerns, the pre workshop bibliography and issues document was considered to be most important. Thus, plans were made to collect information from individuals receiving the document concerning their reactions to it.

Under workshop process concerns, the dominant areas of concern were: (1) resource materials display (2) team meetings (3) the professional task analysis activity, and (4) workshop presentations and presenters. Evaluative information concerning all of these areas was obtained.

Under workshop outcomes concerns, the most important areas were: (1) follow-up processes/services to be provided, (2) action plans that were developed, and (3) the list of competencies needed by personnel concerned with the vocational programming of special needs students. Again information was obtained concerning each of these areas.

The most important workshop impact concerns included: (1) impact on institutions not selected, (2) impact on participants, and (3) impact on participants' institutions. Extensive follow-up data were obtained concerning these areas.

Table 6

INSTITUTIONS SELECTED FOR PARTICIPATION IN THE NATIONAL WORKSHOP
ON VOCATIONAL EDUCATION FOR SPECIAL NEEDS STUDENTS

University of Illinois, Urbana-Champaign
January 13-15, 1978

| Region | Selected Institution | Type of Program | | | Program Status | | | Arrangement | | Training Populations | | |
|--------|--|-----------------|------------|------|----------------|-------|----------|--------------|------------|----------------------|-------------------|---------------|
| | | Pre-service | In-service | Both | Plan-ning | New * | On-going | Single Inst. | Consortium | Teachers | Compre-hensive ** | Others |
| I | University of Vermont VT | | | x | | | x | x | | | x | |
| II | Rutgers, The State University NJ | | | x | | | x | x | | x | | |
| IIa | University of Pittsburgh PA | | x | | | x | | x | | x | | coun-selors |
| IV | Florida Consortium: University of Florida Fl. State University Fl. Tech. University Fl. Learning Res. Sys. FL | | | x | x | | | | x | | x | |
| V | Kent State University OH | | | x | x | | x | x | | | x | |
| VI | Texas A&M University TX | | | x | x | | | x | | | | |
| VII | University of Missouri MO | x | | | x | | | x | | | x | |
| VIII | Colorado State/Univ. of Northern Colorado CA | | | x | x | x | | | x | x | | coordi-nators |
| IX | California State Uni- versity at Long Beach CA | | | x | x | | | x | | | x | |
| X | Oregon State University of Oregon OR | | | x | x | x | | | x | | x | |

* Programs which have been in operation for less than a year.

** Includes the training of teachers, administrators, coordinators, and counselors (from both vocational and special education).

Table 7

Summary Data from the
Evaluation and Planning Concerns Survey (N=57)

| Evaluation and Planning Concerns | Response Frequencies | | |
|---|----------------------|------------------------------|-------------------|
| | Important Concern | Most Important Concern | Weighted Total |
| Workshop Input Concerns | | | |
| Budgetary input/cost effectiveness. | 13 | 7 | 27 |
| Funding agency input. | 10 | 7 | 24 |
| Pre-workshop research bibliography and "Issues" document | 21 | 13 | 47* |
| Steering/Advisory committee input | 19 | 8 | 35 |
| Workshop Process Concerns | | | |
| Process for selection of participants | 8 | 4 | 16 |
| Project staff competency. | 2 | 5 | 12 |
| Reimbursement/payment process for participants | 3 | 0 | 3 |
| Resource materials provided to participants describing other teacher education programs or projects | 28 | 12 | 52* |
| Informal dialogue among participants. | 22 | 2 | 26 |
| Team meetings to develop "action" plans | 22 | 9 | 40* |
| Competency synthesis activity--to develop a list of competencies needed by vocational educators of special needs students | 22 | 13 | 48* |
| Steering/Advisory Committee involvement during the workshop | 9 | 4 | 17 |
| Workshop presentations and presenters | 18 | 10 | 38* |
| Workshop scheduling and organization. | 8 | 1 | 10 |
| Workshop Outcome Concerns | | | |
| Follow-up process/services provided | 17 | 6 | 24 |
| Action plans for development/expansion of personnel preparation programs. | 13 | 23 | 59* |

Table 7 cont.

| Evaluation and Planning Concerns | Response Frequencies | | |
|---|----------------------|------------------------------|-------------------|
| | Important Concern | Most Important Concern | Weighted Total |
| Attitudinal change. | 6 | 4 | 14 |
| Increased awareness and knowledge of professional issues and concerns (e.g., mainstreaming). | 9 | 1 | 11 |
| Opportunity for professional communication/involvement | 4 | 6 | 16 |
| Outcomes related to the development of mini-proposals for workshop participation. | 4 | 5 | 14 |
| Synthesized list of competencies needed by vocational and special education personnel (to be developed by workshop participants). . . | 18 | 13 | 44* |
| Workshop Impact concerns | | | |
| Impact on funding agency (state and federal) personnel. | 10 | 5 | 20 |
| Impact on institutions submitting mini-proposals for participation, but which were not selected | 15 | 5 | 25* |
| Impact on participants | 21 | 5 | 31* |
| Impact on participant's institutional programs | 21 | 25 | 71* |
| Impact on project staff. | 0 | 0 | 0 |
| Impact on steering/advisory committee. | 0 | 0 | 0 |
| Impact on presenters | 1 | 0 | 1 |

* Selected as most important concerns to be evaluated

All data described above are presented and discussed in various sections of this report. Additional supplementing data were also obtained and are presented in the appropriate sections.

State-of-the-Art Document

Purpose

"Issues in the Vocational Programming of Special Needs Students: Synopses of Selected Materials," or the "document" as it came to be called, was compiled for two reasons. First, one of the requirements of the funding agency was the development of a state-of-the-art paper. The staff was asked to review the field of preparing personnel for providing vocational education for special needs students, and to develop a statement of its current status and future directions. Secondly, the document was planned as a pre-conference publication which would provide an overview of the field for the participants prior to the workshop.

Development

The document was a collaborative effort between vocational education and special education members of the project staff. The steering committee offered several suggestions which were incorporated in the document, which includes six major sections.

Dr. Cary N. Clark and Dr. Rupert N. Evans, Professors of Special Education and Vocational-Technical Education respectively, wrote the actual "state-of-the-art" section of the document. In light of the importance of this paper, the authors decided to also include it in the appendix of this report. It can be found in Appendix K. Section II of the document describes a number of general issues and trends in vocational and special education. Issues confronting both fields in their attempts to develop competency-based teacher education programs are described in the abstracts presented in Section IV. Sections III and V briefly describe a number of local programs that serve special needs students and several existing university-level personnel preparation programs. The final section of the document presents a seven page glossary of terms that are commonly used by vocational and special educators, but are seldom well-defined for individuals with backgrounds in the other field.

Dissemination

The document was included in the packets given to all participants at the workshop. One copy was also sent to each of the institutions that had submitted a mini-proposal but had not been selected. In addition, single copies were sent to those individuals from universities, state departments, and local school districts who requested additional information concerning the workshop.

Because of the number of requests for the document an additional 250 copies have been produced and are available from either the University of Illinois or University of Kansas project offices. In anticipation of continued requests beyond the ability of the project to supply this document, it has been entered into the ERIC system and will appear in the July, 1976 issue of Resources in Education. (ED 118 828)

Evaluation of Pre-Workshop Planning

Selection of Participants

In a follow-up questionnaire distributed to team members (see Appendix L), a question was asked regarding the use of mini-proposals as a basis for selection to participate in inservice education workshops for teacher educators. The questionnaire was designed using sets of bi-polar adjectives to describe the use of the mini-proposal as a team selection device. On a scale of one to seven, with seven the most positive, the following mean scores were obtained.

| | |
|-------------------------------|------|
| <i>Purposeful-Aimless</i> | 6.00 |
| <i>Effective-Ineffective</i> | 5.64 |
| <i>Valuable-Worthless</i> | 5.85 |
| <i>Meaningful-Meaningless</i> | 5.84 |

From the mean scores and comments received, it appears that a majority of the participants felt that using a "mini-proposal" for a selection device was a good idea. Some selected comments which were provided supporting this idea included:

"Excellent approach--gets everyone involved--creates a team spirit prior to implementation of workshop"

"Good criteria"

"Forces cooperation and hard thinking"

"Good way to 'sample' what potential participants are trying"

State-of-the-Art Document Evaluation

This document was distributed to workshop participants as well as to initiators of mini-proposals from institutions not selected to participate in the workshop.

In a follow-up questionnaire to those mini-proposal initiators who were not selected, a question was asked concerning the general reactions to the document. Comments received from respondents were classified into favorable and unfavorable categories. Fourteen comments were classified as favorable and only two were unfavorable. The following comments exemplify these categories:

Favorable:

"Helpful in setting up our program"

"Outstanding--comprehensive coverage of current studies of vocational education programs special needs"

"It was useful in preparing our philosophical approach to the program we developed."

"Good source of reference information. Anticipate using this document in future program development"

Unfavorable:

"I found it to be of little use."

"It could be of more value to us with a more pragmatic approach. Handy compilation but like in content to others on the shelf."

Overall, it appears that a majority of those who received the document but did not attend the workshop were favorably impressed by it and found it to be helpful.

POST-WORKSHOP FOLLOW-UP ACTIVITIES

The ultimate measure of the effectiveness of a workshop activity is the extent to which it facilitates continuing or future developments. To simply provide a three day conference was viewed as only addressing part of the task. Once the teams had diligently generated plans of action it was the project staffs' responsibility to further facilitate the implementation of each of the action plans.

This section of the report will describe the follow-up, facilitating and evaluation activities that were undertaken. More specifically, the follow-up funding process, the follow-up activities of each team, and the follow-up evaluation effort will be discussed. The final subsection will describe the dissemination plan for this report and other products emerging from the project.

Follow-Up Funding

Once the teams had submitted their action plans and returned home, each team leader was contacted for negotiation of the follow-up funding. As the action plans were reviewed and discussed, and the major activities delineated, specific expenditure categories (e.g. staff travel, secretarial services, or communication expenses) were identified for each university. A purchase requisition was then processed through the University of Illinois to purchase the materials and services essential to conducting the follow-up activities from each university. A total of \$400.00 was set-aside for each university. After the expenditures had been incurred, the team leaders submitted a complete invoice and payment was processed.

Regrettably, three of the teams were unable to accept the follow-up funding because of institutional constraints and red tape associated with accepting small grants. Descriptions of the specific follow-up activities of the team are provided in the following section.

Follow-up Team Activities

Because of their unique programs, each university team chose to conduct somewhat different activities in the process of implementing their action plan. Some teams set about seeking additional funding while others conducted inservice workshops on a state and regional basis. Each team carefully planned and coordinated their efforts to maximize the impact of their follow-up efforts.

A full program description of each of the participating universities is presented in Part III of this report. The reader may find it helpful to first review the description of individual programs to put the follow-up activities in an appropriate context.

Region I - The University of Vermont

Prior to the workshop, the University of Vermont was already committed to a program of vocational education for special needs students. There is one full-time faculty member in the Vocational Education and Technology Department assigned to develop and teach courses entirely in this area. The two part follow-up of program was related to pre-service education in cooperation with the School of Home Economics and the Special Education Program as well as monthly in-service meetings at various vocational centers around the state.

Activities since the workshop have included:

1. Two workshops on special needs for in-service vocational teachers (30 participants).
2. Identification of needs of in-service vocational teachers working with special needs students.
3. One home economics workshop for special needs teachers (June).
4. Three intensive workshops for in-service teachers to be offered during summer session (1976).
5. Graduate program outlined and to be submitted for faculty approval in late 1976.
6. Two presentations were made to in-service secondary and vocational teachers at Newport Area Vocational Center by Consulting Teacher interns L. Baker and R. Stanton.
7. Plans to implement Center for Vocational Education Competency-Based Modules with Vermont in-service Special Needs teachers have been finalized.

Long term objectives which have been attacked by the University of Vermont team are:

1. Certification of special needs teachers has been discussed and planning for standards is now underway.
2. Initial discussion of long range needs of Vermont for area coordinators of Special Needs Programs has taken place and a professional development program to meet these needs will be developed.
3. An important long-range objective of developing strategies for sensitizing vocational directors and administrators to "special needs" has been formulated. On-going research into this area will be continued in 1976-77.

Region II - Rutgers College, The State University

Rutgers College has had a program in secondary special needs for a number of years. Teaching upper-division courses in the late afternoon and early evening has made it possible to serve both pre-service and in-service teachers.

Since the workshop the team has accomplished one short-term objective:

1. To meet with freshman and sophomore students and advise them of the opportunities and challenges in the field of secondary special education.

And the following long-term objectives:

1. A new emphasis on career education for special needs students has been introduced into several University Colleges courses.
2. Liaison continues with the Departments of Special Education and Vocational Education at the Graduate School of Education. A new consortium, within the University, in the field of Special Education has been started.
3. A summer workshop and fall courses have been planned and advertised for secondary teachers of the handicapped.
4. A portion of a \$900.00 grant for the development of a Curriculum Center is being used for secondary special education.

Region III - The University of Pittsburgh

Because Pennsylvania has been educating all its handicapped children for a number of years, the University of Pittsburgh has been concerned with helping vocational teachers meet the needs of these students.

The short term objectives accomplished since the workshop are:

1. Development and implementation of two competency-based courses.
2. Preparation of 25 vocational teachers to teach special needs students.
3. Training of eight vocational teachers to provide training for other teachers in their schools next year.

Work on the following long term objectives has begun:

1. Mediating two courses.
2. Preparation of additional teachers through summer workshops and courses offered during the 1976-77 school year.
3. Preparation of a core of creative teachers to serve vocational schools in western Pennsylvania.

Region IV - Florida Consortium

The Florida Consortium is a unique combination of universities, the state department of education and the state learning resources center.

Major accomplishment of the consortium to date include:

1. Statewide needs assessment by Dr. Jeanice Midgett.
2. Planning and implementing of a statewide workshop on vocational education for special needs students at the Florida Vocational Association Conference.

Work on additional long-term goals has been started:

1. Coordination of teacher training activities throughout the State.
2. Joint special/vocational education program for both master's and doctoral level has been designed at one institution.
3. The Florida Learning Resources System is giving greater attention to special/vocational needs for materials dissemination.
4. Vocational programs are being evaluated by the State consultant.

Region V - Kent State University

Since 1972, Kent State University has provided extensive inservice education for teaching personnel within the following program areas; Occupational Work Adjustment (OWA) Occupational Work Experience (OWE) and Special Needs Vocational Programs.

The major accomplishments of the team since the workshop included:

1. Implementation of competency project to determine the competencies applicable to OWA, OWE and EMR work/study teacher-coordinators.
2. A proposal written for a state-wide vocational and special education teacher education conference.
3. Creation of a state-wide steering committee to assist the Kent State team with long-term and short-term program objectives. The first steering committee meeting was held in June, 1976 with representatives from vocational and special education at Kent State and the State Department of Education.
4. The organization of a 20 member teacher advisory board, consisting of local teachers and administrators involved in OWA, OWE, and/or EMR work study programs in Northeastern Ohio. The first meeting was conducted in June, 1976.
5. A series of team meetings were conducted to examine and redesign selected existing special and vocational courses in order to address the instructional needs of special needs personnel.

Region VI - Texas A & M University

Texas, as many other states, has a shortage of individuals prepared to serve the vocational needs of handicapped youth. In order to alleviate this shortage, Texas A & M is implementing a program which focuses on the preservice and inservice training needs for vocational adjustment coordinators, special vocational instructors and support staff.

Activities directed toward this end since the workshop have included:

1. Initiation of Project ENCOUNTER with the College of Education.
2. Development of a system for collecting, reviewing, and filing instructional resources for Project ENCOUNTER.
3. Contact with LEA's for pilot testing and inservice components.
4. Discussions with Texas Education Agency personnel.
5. Discussions with other agencies in USOE Region VI.
6. Development and submission of a proposal for a Region VI Teacher Education Workshop on Vocational Education for the Handicapped.

Region VII - University of Missouri-Columbia

With the growing demand in the state for individuals with competencies to provide vocational service to special needs students, the University of Missouri has been involved with in-service programs.

The major accomplishments since the workshop have involved discussions with the St. Louis Special School District and the State Department of Education. This has led to the writing of a proposal to conduct a one year comprehensive needs assessment study. On the basis of this study, the in-service and pre-service programs will be expanded and implemented.

Region VIII - Colorado Consortium

This consortium is composed of Colorado State University and the University of Northern Colorado in conjunction with the State Board for Community Colleges and Occupations.

The major accomplishments since the workshop are:

1. Development of needs assessment instrument to determine vocational teachers' competencies which need to be improved in programming for special needs students.

2. Plan for dissemination of instrument to vocational teachers at Colorado Vocational Association Annual Meeting in August, 1976.
3. Plan for inservice workshops as determined by needs assessment.
4. Course outlines for "Teaching Vocational Education for Learners with Special Needs" are compatible at University of Northern Colorado and Colorado State University.
5. All undergraduates in education at the University of Northern Colorado are required to take "Special Education for the Regular Classroom Teacher".
6. Plan for all education undergraduates at Colorado State University to take the course "Vocational Education for Learners with Special Needs".
7. Colorado State University and the State Board are continuing help to inservice vocational teachers.

Region IX - California State University at Long Beach

The program for special needs students at CSULB is based on a need for interdisciplinary training of teachers to work with special needs students.

The major accomplishments of the team since the workshop include:

1. Development of courses (vocational education, home economics, and special education) related to vocational futures for special needs individuals.
2. Development of a funding proposal (one of six forwarded to Washington) outlining a cooperative effort in vocational education for special needs students among several agencies and university departments.
3. Identification and purchase of resource materials needed for courses.
4. Development of a proposal for a OHEW Region IX meeting on vocational education for special needs students.
5. Identification of contribution by university personnel to the career development of special needs students.
6. Identification of initial changes in curriculum.
7. Identification of initial community resources.

Region X - Oregon State University (University of Oregon)

This consortium is a joint effort between Oregon State University (primarily vocational education) and the University of Oregon (primarily special education).

The major accomplishments of the team since the workshop include:

1. Joint summer workshop on the clarification of the roles of special and vocational educators in the habilitation of special needs students.
2. Development of a program for teacher preparation of special needs students in vocational education based on a collective effort between the two university faculties. Specifically, OSU will offer the vocational component and University of Oregon the special education component of the program.

Follow-Up Evaluation

Three instruments were developed by the evaluator and project staff to collect follow-up data regarding the post-workshop activities and impacts. Separate questionnaires were developed for soliciting information from each team, the individual participants, and from the initiators of the mini-proposals which were not selected for participation in the workshop.

Team Questionnaire

In May, a five-page questionnaire was sent to each of the ten team leaders. The purpose of the questionnaire was to determine the extent to which the teams had been able to implement their action plans. It was suggested in the cover letter to the team leaders that they make a serious effort to involve all of the team members in filling out the questionnaire. The questionnaire and the summary data are presented in Appendix L. Completing and returning this questionnaire before June 1, 1976, was required before payment of the follow-up funding (\$400.00) was approved. More importantly, it was felt by the project staff that the requirement of having to complete the follow-up questionnaire "as a team" would once again create a cooperative endeavor.

At the writing of this report, team questionnaires had been received from all teams. Four of the eight responding teams indicated that they had held team meetings to review and respond to the questionnaire. Two team leaders indicated they had completed the questionnaires, but had circulated it to the other team members for review prior to submitting it. It appeared that the other four questionnaires had been completed by either team leaders or another team member. It should be noted that the questionnaire was distributed during a very busy time of the year for teacher educators. One team leader wrote on his team's questionnaire that he was unable to arrange a team meeting because the faculty was heavily involved in final exams and submitting grades.

After reviewing the action plans five major areas of concern were identified for both the team and individual participant follow-up questionnaires. These

areas of follow-up concern included possible activities related to:

1. Course and/or program development
2. Staff development
3. Explanation of funding sources
4. Specific communication/cooperation efforts
5. Inservice teacher education

Course/Program Development. Several of the teams reported having either planned or completed a number of course or program development activities during the five month follow-up period. Two teams reported having completed work on proposals for an introductory preservice or inservice course. Two other schools have completed proposals for an advanced (e.g., methods) course for preservice or inservice personnel. Two other schools have developed plans to revise existing courses. In addition to planning and implementing courses, two teams were active in the development of degree programs. During the months following the workshop one school submitted a proposal for an undergraduate degree program related to training special needs personnel, while another school had submitted a graduate degree program for approval. One team also reported having developed extensive plans for a graduate level program, but indicated that the proposal had not yet been submitted for approval. Five universities responding indicated "in existence prior to the workshop" for many of the course/program development activities listed on the questionnaire. However, this was the expected response from those universities which were selected, in part, because they had an established, on-going program. It does appear that at least five of the teams were highly active in developing and implementing courses or degree programs related to preparing special needs personnel.

Staff Development. Four teams reported having planned activities designed to evaluate the competencies of their respective faculties in the area of preparing vocational and special education personnel. Two of the schools had developed job descriptions of faculty positions related to special needs. Data were not available to indicate whether or not these positions had been approved or filled.

Funding Exploration. This was a very active area of follow-up activity. It is apparent from the reported level of this type of activity that many of the universities will require external funding to initiate new teacher education programs, and in some instances funding will be essential to maintain existing programs. Funding was sought and obtained from university, state, and federal sources. The funding was obtained for inservice workshops, research, curriculum development, and planning committee meetings.

At least four teams initiated major efforts in developing proposals and were successful. Texas A & M developed a proposal for a U.S.O.E. Region VI workshop for teacher educators on vocational education for the handicapped.

The team from Missouri submitted a developmental research proposal to their state department of education for the Identification of Training Needs of School Personnel Responsible for the Career Education of Handicapped and Disadvantaged Students in Missouri. A Summer Workshop on Vocational Students with Special Needs was planned by the Oregon State /University of Oregon team and funded by the Oregon Department of Education, Career and Vocational Education Section. The workshop will serve approximately 85 vocational and special education teachers, as well as 25 vocational administrators and 25 manpower administrators from CETA agencies. The Florida Consortium which attended the national workshop has also been funded by the Special Education Division of their state office of education to plan, conduct, and evaluate a statewide conference on vocational programming for special education students.

The cooperative and articulation philosophies which were emphasized and exemplified by the national workshop are readily observable in the proposals that have been submitted and funded. All of the proposals mentioned previously involve the vocational-special education team which attended the workshop in leadership roles. Each proposal emphasizes and is designed around the cooperative involvement of vocational and special education teachers, as well as administrators and counselors, and personnel from rehabilitation agencies, state advisory councils, state offices of education, and prime sponsors under the CETA legislation. Two of the projects which are focused on inservice training will directly involve teacher educators, and also include provisions for follow-up of the participants.

It is noteworthy that these projects reflect the emphases and parallel the design of the national workshop. These four projects represent the expenditure of over \$100,000 in the coming year, and will result in the inservice preparation of more than 500 persons at various levels to work in the area of vocational programming for special needs students. It appears that several of the other teams have been actively pursuing funding as well. However, in these four funded projects alone the total funding for the national workshop has resulted in generating more than twice the initial expenditure in new proposals for personnel development activities. Similarly, the number of personnel which will be trained as at least an indirect result of the national workshop has multiplied from 50 to 500.

Specific Communication/Cooperation Efforts. Nine of the institutions reported having joint departmental or joint university meetings both prior to and following the national workshop. One of the teams has been holding cooperative meetings since 1973 and all increased this activity after the workshop.

Several committees have also been established. One team has established itself as an internal advisory committee serving both the vocational and special education departments. Another team has been involved in the development of a Task Force for Secondary Special Education Certification. Several other teams indicated that their continuing activities have been recognized and endorsed by department chairpersons and others as an informal liaison effort.

Other forms of cooperative efforts reported by the teams have included: the development of grant proposals, the establishment of a newsletter, and involvement in a consortium of special education personnel from colleges in the state.

Inservice Teacher Education. The efforts of the teams in the area of inservice activities was largely described under the preceding description of the funding efforts. Nine reported having written and submitted proposals for inservice activities. To date, three of the planned inservice activities have been funded and the teams are currently in the process of disseminating information regarding the inservice activity. The three funded activities include two state-wide summer workshops, and one regional (multi-state) teacher education workshop.

Participant Questionnaire

A follow-up questionnaire was also developed to determine the impact of the workshop on the participants as individuals. A series of questions was asked to determine the new and different activities in which the participants had been involved and to what extent this involvement was due to the workshop. In addition, questions were asked to determine general reactions about the workshop and to determine opinions about inservice education for teacher educators in general. Of 54 questionnaires mailed, 38 were returned for a return rate of 70%. The questionnaire is presented in Appendix M.

Table 8 on the following page presents a summary of the information concerning new activities in which the participants have been engaged since attending the workshop. The data are presented in ranked form with the item receiving the largest number of affirmative responses listed first.

The largest impact on the participants was to increase communication and cooperation with colleagues in other disciplines. The least amount of activity was reported in the area of membership on teacher education committees. It is interesting to note that of the 15 items specified as possible areas of impact, 11 items had a majority of the individuals indicating participation in this activity for the first time since the workshop. In all cases, a large percentage indicated the involvement was somewhat or completely due to participating in the workshop.

A question was asked about describing any other impact on the participants' feelings, attitudes or behaviors resulting from the workshop. After classifying the comments, the area most frequently mentioned was that the participants were more aware of the need for vocational programs for special needs students as a result of the workshop.

Participants were asked to describe any future activities in which they may be engaged as a result of the workshop. The predominant response involved the planning and conducting of some type of inservice program concerning vocational programming for special needs students.

Table 8

Summary of the Responses from the Participant Follow-Up
Questionnaire on Post-Workshop Activity

Was This A New Activity Initiated on your part for Vocational Programming of Special Needs Students?

If YES, to what extent is or was your new involvement in this activity due to participating in the workshop?

| | YES | NO | Completely | Somewhat | Not at all |
|---|-----|----|------------|----------|------------|
| Increased communication/cooperation with colleagues in other disciplines (special education, vocational education, counselor education).... | 36 | 2 | 13 | 22 | 1 |
| Increased reading of professional literature concerning vocational programming for special needs students | 28 | 9 | 5 | 19 | 4 |
| Exploration of funding sources | 26 | 11 | 9 | 10 | 6 |
| Increased communication with state or federal personnel | 26 | 11 | 7 | 17 | 2 |
| Planning of inservice workshop | 25 | 12 | 4 | 16 | 5 |
| Course planning/development ... | 24 | 13 | 4 | 17 | 2 |
| Proposal writing for funding ... | 21 | 17 | 9 | 7 | 5 |
| Evaluation of existing teacher training program... | 21 | 16 | 7 | 6 | 8 |
| Assist in organizing program advisory or steering committee | 20 | 17 | 8 | 6 | 5 |
| Presentation at Inservice workshop | 20 | 17 | 5 | 7 | 7 |
| Research involving vocational programming for special needs students | 19 | 18 | 4 | 10 | 5 |
| Membership in professional organization(s) concerned with vocational programming for special needs students (NAVESNP, CEC, etc.)... | 18 | 19 | 3 | 8 | 7 |
| Degree program planning/development | 17 | 20 | 3 | 13 | 1 |
| Professional writing related to vocational programming for special needs students | 11 | 26 | 1 | 6 | 4 |
| Pertinent teacher education committee membership (e.g. curriculum committee)... | 7 | 30 | 2 | 4 | 1 |

Participants were asked about their participation in team activities since the workshop. The semantic differential technique, which allows attitudes to be measured in terms of favorableness-unfavorableness and intensity, was used. The following mean values were obtained for three sets of bi-polar adjectives when a 7 point scale (with 7 being most favorable) was employed.

| <u>Mean</u> | <u>Bi-Polar Adjectives Describing Personal Team Participation</u> |
|-------------|---|
| 4.97 | Active-Passive |
| 4.79 | Extensive-Limited |
| 5.09 | Contributing-Noncontributing |

For each pair of adjectives the attitude toward their team activities appeared favorable but not strongly so. The informal comments received in response to this question tended to indicate that many of the respondents had other obligations which restricted their activity as team members.

Follow-up information was also collected concerning three aspects of the workshop. A follow-up assessment of the presentations, the Professional Task Analysis Activity, and the team meeting sessions was conducted for the purpose of determining whether or not the participants' reactions to these had changed.

The table below presents the mean scores for the bi-polar adjectives used to assess the workshop presentations, the professional task analysis activity and the team meetings. Here again, a seven point scale with 7 being the most favorable response was used.

| | <u>Mean</u> | |
|---|-------------|-------------------------|
| Overall reaction to presentations at workshop | 4.95 | Profitable-Unprofitable |
| | 4.41 | Interesting-Boring |
| | 5.06 | Purposeful-Aimless |
| | 4.66 | Effective-Ineffective |
| Reaction to Professional Task Analysis Activity | 4.05 | Purposeful-Aimless |
| | 3.65 | Effective-Ineffective |
| | 3.56 | Profitable-Unprofitable |
| Reaction to the team meetings | 6.00 | Profitable-Unprofitable |
| | 5.75 | Effective-Ineffective |
| | 5.84 | Interesting-Boring |

Overall, it appears that the follow-up data from the individual participants indicate a somewhat favorable assessment of the presentations, a very favorable

reaction toward the team meetings, and a neutral or somewhat unfavorable attitude toward the Professional Task Analysis activity.

The participants were asked to comment on the extent to which the general objective of the workshop was accomplished. A majority of those responding (56%) felt that the objective of developing a feasible action plan for their personnel preparation program was extremely or very well accomplished.

The participants were asked to indicate any personal benefits gained as a result of the workshop. The benefit most often mentioned was "interaction with other professionals in this area." The second most frequently mentioned benefit concerned increased knowledge and awareness of the need for vocational programming for special needs students.

Non-Participant Questionnaire

A brief questionnaire was sent to the 58 institutions who submitted a mini-proposal for consideration to attend the workshop, but which were not selected. Twenty-four questionnaires were returned. The primary purpose of the questionnaire was to determine to what extent, if any, the writing of the mini-proposal had affected their program or staff. In addition, questions were asked concerning the usefulness of the State-of-the-Art Document. This information was presented in the workshop planning section of this report. The questionnaire appears in Appendix N.

The respondents were asked to describe any impact which had resulted from the development of the mini-proposal. The responses generally fell in the following categories: (1) positive impact, (2) negative impact, and (3) no impact. Under positive impact, three general categories emerged.

1. Increased cooperative efforts and attitudes between special education and vocational education - (6 comments)
2. Increased interest in developing or revising teacher education programs - (7 comments)
3. Other positive impact - (4 comments)

Under negative impact only one comment was received, and for no impact five comments resulted.

Such comments as the following were representative of the category of increased cooperative efforts.

"The cooperative attitudes between the two departments were further strengthened through the joint preparation"

"Preparation of the mini-proposal provided an opportunity for members of these departments to work jointly in finding solutions to similar problems, (concerning special students) and also discover other areas of possible cooperative effort"

"A cooperative effort between members of vocational education and special education."

Comments regarding increased interest in the development of teacher education programs were also offered, such as:

"(Writing the mini-proposal) brought expectations up for implementing a more comprehensive program of teacher education to incorporate vocational technical education with special education"

"Our School of Education approved a new program to develop prevocational teachers and coordinators of the mildly handicapped."

"The mini-proposal encouraged revision of existing Occupational Education Teacher Education program."

Under the other positive impact category, the following comments are examples.

"Recognized that what we've been advocating for years has come nearer to fruition"

"The mini-proposal we submitted was routed through our district office where it elicited some surprising results. The superintendent felt the plan unique enough to institute summer workshops to facilitate it."

One comment was received indicating possible negative impact. It was:

"The failure to receive reinforcement, or success, from the efforts has not strengthened attitudes toward the preparation of such proposals."

Five comments which indicated no impact were also received. The following are representative of this category.

"There was absolutely no impact upon our faculty or institution as a result of the submission of the mini-proposal"

"Little impact as of now because we are still a fledgling program"

"None that I can identify. An awareness of the need of such programs was obviously noted"

After reviewing the comments, it would appear that the majority of the institutions responding felt that the activity of writing the mini-proposal was at least somewhat worthwhile.

The table below presents mean scores describing the respondents' attitudes toward the changes or impacts resulting from the development of the mini-proposal. A six point scale with 6 being the most favorable response was used. Overall, it appears that a somewhat favorable attitude exists toward the impacts or changes that resulted.

| <u>Mean</u> | <u>Bi-Polar Adjectives Describing Non-Participants' Feelings Toward Developing the Mini-Proposal (N=24)</u> |
|-------------|---|
| 4.66 | Profitable - Unprofitable |
| 4.00 | Effective - Ineffective |
| 4.27 | Valuable - Worthless |
| 4.58 | Desirable - Undesirable |

In general, it appears that although these institutions did not participate in the workshop, some favorable changes occurred at their institution or with their faculty as a result of writing and submitting of the mini-proposal. Unfortunately, no data are available on the thirty-four non-responding institutions. This high rate of non-response may indicate that failure to be selected for the workshop was discouraging, or that lacking reinforcement from a workshop environment these institutions may have done little since preparing their original mini-proposal.

Summary

From the follow-up evaluation responses from both participants and non-attending individuals, the National Workshop appears to have made a substantial impact on teacher training personnel in both vocational and special education. The workshop has been a catalyst for creating new program development, as well as expanding several existing preservice and inservice university programs. In addition to institutional programs, the workshop appears to have had a substantial impact on the participants. The majority of those who returned the participant questionnaire (38 of 54) reported being involved in several activities for the first time as a result of the workshop. The most frequently reported new activities included: increased communication and cooperation, reading of professional literature related to vocational programming for special needs students, exploration of funding sources, increased communication with state or federal personnel, and course planning and development.

To date at least four of the participating teams have been successful in obtaining funding for additional inservice training activities. Three of these activities are patterned after the national workshop in both design and mission, and will result in the training of approximately 500 individuals.

Although the response from those submitting non-accepted mini-proposals for participation in the workshop was limited (41%); 74% of those who responded generally felt the mini-proposal had had a positive impact on their program or institution.

Unless another follow-up study is conducted at a later date, it will be impossible to trace or measure the full benefits of the national workshop. However, it does appear, that within the five months following the workshop, the ripple effect which has occurred has been positive and substantial.

Dissemination

The report of workshop activities is being distributed to all participants, steering committee members, and the non-selected institutions. In addition, it will be sent to special needs personnel in the state departments of education and any other individuals requesting copies. The report will be available, as the supply lasts, from either Dr. Rupert N. Evans, 284 Education Building, University of Illinois, Urbana, IL 61801 or Dr. Gary M. Clark, 364 Haworth Hall, University of Kansas, Lawrence, KS 66045. It is expected that the report will eventually be available through the E.R.I.C. System.

PART II. PROFESSIONAL TASKS FOR SPECIAL NEEDS PERSONNEL

Although a substantial demand exists nationwide for personnel who can effectively serve special needs students in all types of vocational programs, little has been done to develop preparation programs for personnel with these competencies. Inservice and preservice preparation programs have been few in number, partly because the specific skills needed by special needs personnel have not been delineated, except in a few isolated studies that have focused on single vocational program areas or single professional roles (e.g. work coordinators).

The identification and careful analysis of abilities needed by personnel is fundamental to the process of developing personnel \ preparation programs. Thus, it was deemed appropriate to devote effort to reviewing, analyzing, and assessing the tasks commonly performed by vocational and special education personnel.

The remaining parts of this section of the report will include: (1) a brief review of the literature on competency identification and analysis for personnel development as it pertains to special needs vocational programming, (2) a description of the process used to develop the Professional Task Analysis Questionnaire, (3) a review of the pilot, comparative data collected prior to the workshop, (4) presentation and analysis of the data collected during the workshop, and (5) a discussion of the results.

An Abbreviated Review of the Literature on Competency-Based Teacher Education¹

The published literature on competency identification and analysis is extensive and diverse in nature. This brief review of issues and the approaches to identifying and validating competencies for personnel training represents only one section of the growing literature regarding competency-based teacher education.

Performance or competency-based teacher education has received significant attention in recent years. The fundamental notion of competency-based teacher education is that the identification of operationally-defined teacher skills is related to increased student achievement, and should be utilized as a basis for the development of materials and programs for training teachers (Heath and Neilson, 1974).

A precursor to the competency-based movement in teacher education has been the identification, development, and use of student performance objectives (Gorman and Hamilton, 1975). The essential elements of performance-based instruction for students have been looked upon favorably by certain groups suggesting needed, fundamental changes in the traditional approaches to teacher education. Stanley Elam (1971) identified five essential elements of competency-based teacher education:

1. Teaching competencies to be demonstrated are role derived, specified in behavioral terms, and made public.
2. Assessment criteria are competency-based, specify mastery levels, and are made public.
3. Assessment requires performance as prime evidence, but takes knowledge into account.
4. [The teacher education] student's progress rate depends upon demonstrated competency.
5. Instructional program facilitates development and evaluation of specific competencies (p. 13).

¹For a more complete review of the literature see: L. Allen Phelps, "Competency-Based Inservice Education for Secondary School Personnel Serving Special Needs Students in Vocational Education: A Formative Field Test Evaluation." Unpublished Ph.D. dissertation, University of Illinois, 1976.

Rosenshine (1974) finds that there have been very few attempts to summarize the current state of our knowledge on teaching competencies and that the present scientific base for teaching and teacher education is primitive. In addition, Travers (1975) notes several difficulties connected with defining and using the term "competency." The nondiscruteness of the term, the illusion of clarity, and the contemporary political advantages of the label have confounded much of the literature on competency-based teacher education in his view.

Most of the competency research appears to focus on identifying competencies which correlate with student achievement. Rosenshine and Furst (1971) studied the correlational research on 25 teaching competencies, and found nine variables that provide promising suggestions for future research:

1. Clarity of teacher's presentation
2. Variety of teacher-initiated activities
3. Enthusiasm of teacher
4. Teacher emphasis on learning and achievement
5. Avoidance of external criticism
6. Positive responses to students
7. Student opportunity to learn criterion material
8. Use of structuring comments by teacher
9. Use of multiple levels of questions or cognitive discourse (pp. 44-54).

Travers (1975) suggests that characteristics other than pupil achievement may be legitimate bases for determining a teacher's effectiveness. Conversely, there may be factors other than teacher behavior which influence student achievement. Heath and Neilson (1974) conclude, based on a systematic analysis of seven common characteristics in 42 competency research studies, that effects of techniques of teaching on achievement (as these are defined in CBTE research) are likely to be inherently trivial. They cite the well documented, strong association between student achievement and variables such as socio-economic status and ethnic status as the primary factors influencing student achievement.

Another problem related to competency-based teacher training programs is the problem of determining who is competent to determine the competencies. Shearron (1974) used a competency-based approach to determining the in-service needs for local school personnel and suggests the following procedures:

1. Teachers should make the final decisions on needed competencies to perform effectively in a school district. However, teachers should have opportunities to consider the theoretical aspects of teaching, including research findings prior to making decisions about needed competencies.
2. A continuum of proficiency for each competency should be developed in order to allow for continuous teacher growth. The indicators of proficiency on this continuum should be negotiated by the assessor and the teacher (pp. 122-123).

Rosenshine (1974) suggests that another problem relative to competency-based teacher education is one of integrating research findings into some meaningful context for teacher educators. One of the problems encountered in approaching the problem is the nature of available research. Most of the studies find that different training approaches neither increase nor decrease the frequency or quality of the desired teaching behavior. Even if this problem could be overcome we would still be faced with the fact that training materials and programs focus on generating desired teaching behavior effectively and efficiently without first determining whether the desired behavior does indeed facilitate student achievement. Correlational studies abound in areas such as the training of teachers in the use of higher-order cognitive questions. It is well known that most correlational studies are incapable of demonstrating specific cause and effect relationships. After a detailed analysis of correlational and experimental studies on teacher questioning strategies, Rosenshine found that even in the experimental studies, there is no empirical evidence to support the commonly held notion that the use of higher-order questions contributes to gains in student achievement.

Rosenshine and Furst (1971), Rosenshine (1974), and Heath and Neilson (1974) all suggest the need for using stronger research designs in validating teaching competencies which are effective and important. While the emphasis is on using experimental, as opposed to correlational designs, it must be realized that certain conditions must be met before experimental research can be initiated. "The first step is to determine whether teachers trained for specific performance criteria behave differently in their classrooms from similar teachers who do not receive the training" (Rosenshine and Furst, 1971, p. 65). As suggested by the introductory chapter, one of the basic problems is the lack of emphasis in preservice and inservice teacher training programs on developing competencies in vocational and special educators to facilitate the career and vocational development of special needs learners. Clark and Oliverson (1973) report that programs to train secondary level special education teachers are almost nonexistent. Numerous reports were cited earlier describing the lack of emphasis given to special needs in vocational teacher education programs.

There is also a lack of research on definable and effective training techniques which would point out competencies needed by habilitation personnel. Throughout the literature, training, almost without exception, refers to exposure instead of to systematic, controlled manipulations of the environment which are administered so that their educational effects can be measured and recorded (Gold, 1972). Oaklief (1971) notes that a similar condition exists in vocational education programs designed to serve a specific group of students. "Research and evaluation on the success and accomplishment of vocational-technical education programs on the rurally disadvantaged is noticeably lacking" (p. v).

Without the existence of a substantial number of training programs and basic research to suggest promising competencies facilitating the occupational development of special needs students, it is unlikely that experimental validation studies can be readily initiated at this time.

Vocational Education Competency Studies

A number of descriptive studies have been conducted to suggest competencies which are critical for vocational educators, special educators, or personnel from both fields.

Cotrell, et al. (1970) developed a list of 390 competencies for vocational-technical education teachers and coordinators using introspection and interview techniques in an occupational analysis, using a representative national sample of 750 vocational teachers. This analysis of vocational-technical teaching yielded competencies in ten major categories: (1) program planning, development, and evaluation; (2) planning of instruction; (3) execution of instruction; (4) evaluation of instruction; (5) management; (6) guidance; (7) school-community relations; (8) vocational student organizations; (9) professional role and development; and (10) coordination. This framework has also been adopted by at least one state-level project to identify and specify competencies appropriate to vocational teacher education within the state of Illinois (Hackett, 1974).

Cook, et al. (1972) have developed a list of 75 competencies for a preservice vocational teacher education program. Originally identified by university faculty members and validated by local school personnel, school board members, business and industry representatives, high school and community college students, and graduates of vocational programs, the competencies were classified into seven major categories: (1) plan; (2) instruct; (3) evaluate; (4) guide; (5) manage; (6) public and human relations; and (7) professional role.

Special Education Competency Studies

Hewitt (1966) identified a number of competencies for teachers of emotionally handicapped children. The broadly stated competencies were identified under seven main headings: objectivity, flexibility, structure, resourcefulness, social reinforcement, curriculum expertise, and intellectual model.

Dinger (1971) identified competencies for teachers of secondary level educable mentally retarded students. The 41 competencies listed are more specific than those suggested by Hewitt, and suggest that teachers should have a background in teaching prevocational skills.

Scott (1967) suggested five broadly stated competencies for teachers who work with culturally disadvantaged students: (1) proficiency in dealing with rapidly changing situations that arise in the classroom; (2) perceptiveness and capability in meeting psychological needs of students; (3) skill in modifying learning experiences in the content areas; (4) responsiveness to situations that arise in the classroom to help pupils acquire and practice social skills; and (5) flexibility in decision making.

Brolin (1973) reported a survey study, the purpose of which was to identify the needs of secondary educable mentally retarded students and the competencies teachers need to have to meet these needs. A total of 31 teacher competencies in four curriculum areas were rated as highly important by 205 secondary special education teachers and administrators: occupational, activities of daily living, psychosocial, and academic. A chi square analysis showed that significantly ($p < .05$) more occupational competencies were rated as most important than were the other three types of competencies. The respondents were also asked to match the competencies to personnel who should ideally perform them. Significantly greater ($p < .05$) responsibility was endorsed for prevocational coordinators for the occupational area competencies.

Melby and Regal (1972) compiled and evaluated a list of 67 competencies in five general areas for special education personnel. The general competency areas included: (1) teacher affect; (2) teacher effect; (3) teacher characteristics; (4) teacher interaction with other school personnel; and (5) teacher relationship with parents and community.

Special Needs Competency Studies

Ferns (1971) identified nine training needs of special needs workers in vocational education programs. His statewide interview survey of local administrators, consultants, and teacher educators in Michigan identified the following training needs:

1. Developing awareness of the specific needs of the handicapped and disadvantaged.
2. Knowing who the handicapped and disadvantaged are, how to plan programs for them, and how to accommodate them in regular programs.
3. Compassion for and understanding of individuals.

4. Knowing differences in teaching methods and materials for special needs students as compared to normal students
5. Evaluating programs
6. Adapting curricula to the open entry-open exit concept and the immediate feedback or reward concept
7. Developing skills in human relations
8. Handling potentially explosive urban situations
9. Understanding of the drug problem, student dissent, and racial issues (pp. 193-194)

Kemp (1966) also identified from program experience, ten competencies which are critical for vocational teachers in successfully teaching special needs students. The suggested competencies include: (1) subject matter competence; (2) interest in working with special needs students; (3) the ability to reinforce slow learners and respond to all students; (4) the ability to seek out new techniques for communicating with the students; (5) skill in presenting goals to students and aiding them to meet challenges; (6) the ability to measure students by individual achievements; (7) specialized training to work with the disadvantaged learner; (8) the ability to work with other school personnel; (9) the ability to gear instructional materials to the understanding of the students; and (10) skill in helping students build improved self-concepts.

Kruppa, et al. (1973) synthesized a list of 330 competencies from three other national competency studies. A jury of experts consisting of university faculty members from the departments of industrial and special education at Trenton State College evaluated and classified the competencies in eight categories: (1) program development; (2) instruction; (3) knowledge of the learner; (4) community resources; (5) professional role and development; (6) management; (7) personality development; and (8) guidance.

Albright, Nichols, and Pinchak (1975) identified 112 professional competencies necessary for occupational education teachers of disadvantaged and handicapped youth in six categories: program management (30 competencies), curriculum (19 competencies), classroom management (22 competencies), coordination (16 competencies), remediation (14 competencies), and counseling (11 competencies). A total of 718 teachers and coordinators returned questionnaires on which they rated the frequency of performance and importance of the listed competencies. A chi square analysis was used to determine whether selected competencies were more important to the responding personnel working in three state funded vocational programs for handicapped and disadvantaged youth. It was suggested that separate preservice or inservice training programs for these personnel would be a duplication of effort since it appeared their roles were highly similar.

Schoonmaker and Girard (1975) took another approach in identifying competencies for habilitation personnel. Under the direction of Clark, they developed a procedure for systematically analyzing the performance elements in a habilitation services delivery model. A two-way lattice analysis was used to specify needed instructional modules and five major functions and nine baseline behavioral units or activities were identified. This basic lattice structure, was then further analyzed to identify personnel training modules. Specific competency areas and competencies were identified when the instructional modules were further broken down. This approach appears to limit the possibility of overlooking competencies required in the systematic delivery of professional services or instruction. However, Travers (1975) has criticized such research-free systems analysis approaches as clearly not attempting to build upon what is known about the problem.

Review and Summary

It appears that at least three schools of thought currently exist on the process for identification and validation of competencies. One group, for which Rosenshine, Heath, Neilson, and Furst appear to speak, contends that validation of competencies should be based ultimately on student achievement. That is, the primary considerations in designing a teacher education program should be based on empirical data which verify that the proposed competencies result in achievement by students in the classroom.

A rather large group of researchers have conducted competency identification studies using descriptive techniques. They tend to use questionnaires and other types of surveys to determine the frequency of performance and perceived importance of specific tasks in the teaching process. The principal respondent groups, ranging in size from 50 to 2000, have been teachers and administrators.

A third approach to competency identification has involved analysis of theoretical models for the professional role(s) being examined. Schoonmaker and Girard's work was the only study of this type included in this review, but the major curriculum projects of the 1950's and early 1960's used similar frameworks for teacher competency identification. The process begins with the development of a theoretically and conceptually sound representation of the subject matter area or teaching model. Sections and subsections of the model are then carefully analyzed to identify the implicit and explicit teacher competencies required to implement the model in an educational setting.

Developmental Activities

In light of the problems raised by the review of the literature on competency-based teacher education (CBTE), it was considered essential that this project further examine the implications of CBTE for training special needs personnel. The lists of competencies developed in both the fields of vocational and special education in recent years were reviewed and synthesized. These extensive and lengthy lists of competencies and sub-competencies were condensed into a shorter, more manageable list of major tasks which could guide the overall planning of comprehensive programs without dictating a specific structure. Several useful purposes were served by this effort. First, the review and analysis of the list of competencies provided a means for generating discussion among participants from different universities during the small group sessions at the workshop. Second, the composite list of tasks drawn from completed competency studies was useful in facilitating the development of instructional action plans by the attending university teams. Finally, extensive and diverse special needs background and program development experiences of teacher educators, researchers, and practitioners present at the workshop provided an excellent data base for a consensus assessment of a list of major professional tasks commonly performed by special needs personnel.

An Initial Concern

The authors have been somewhat hesitant to fully adopt the label of "competencies" for the results of this activity. First of all, the competency studies and competency-based teacher education curricula reviewed generally contain extensive lists of highly specific behaviors or skills. For the purpose of discussion and reflection at the workshop, it was anticipated that lengthy lists of specific behaviors or performances would inhibit the dialogue which is important in new program development efforts. The project staff was also familiar with cautionary appraisals of the competency-based movement offered by Broudy (1975) and others. Although the competency-based movement is viewed as useful for fostering accountability and for emphasizing the continuing need to reflect upon educational goals, research evidence is presently not available to suggest conclusively that identification of specific competencies produces more effective teachers. For these reasons, the project staff thought it best to identify the major tasks needing to be performed in the delivery of effective programming rather than role-specific competencies.

Several activities were undertaken in the process of developing the professional task analysis activity. A number of competency studies and competency-based programs were reviewed. From these a synthesized list of major professional tasks essential to providing vocational programming for special needs populations was developed. After an initial list was generated, several criterion questions were developed which would provide critical review and analysis data. During this process, procedures for organizing and directing the small group sessions in which the questionnaire was to be used were also developed and pilot tested.

Competency/Task Sources

Approximately 60 documents were obtained from teacher educators and state office personnel as the results of a letter mailed to the state offices of education in September. A number of other references were obtained from institutions submitting mini-proposals in October. Six studies were particularly useful in formulating the initial list of professional tasks. Four of these lists (Albright, et. al., Cotrell, et. al., Kruppa, et al., and Schoonmaker and Girard) were described in the preceding review of the literature. These studies provided validated lists of competencies, sub-competencies, and performance elements for the general fields of work experience coordination and adjustments, general vocational education, industrial education, and secondary special education.

The competency-based curricula for preparing vocational and special education and rehabilitation personnel developed by the University of Wisconsin-Stout also provided a competency list that was, in part, utilized (Brock, 1975). Several task statements were drawn from a list developed by Phelps (1976), which emphasized instructional planning and development competencies for secondary-level, vocational and special education personnel.

Task List Development

From these six studies approximately 55 task statements were initially identified. An extensive effort was made to select, and in some instances revise, task statements at a consistent level of specificity-generality. No attempt was made to select tasks commonly performed by any one professional in a local educational agency. The task statements were designed to identify the critical components needed in effective vocational special needs programming, not to specify "who" should necessarily or by design perform them.

After considerable sorting and reviewing by the project staff, the list was condensed from 55 to 49. To aid the respondents in reviewing the list, the 49 statements were placed in four categories. These categories (assessing needs, planning, implementation, and evaluation) represent the major functions associated with the delivery of instructional programs and supportive services, and have been used in a number of competency-related studies and programs in the field of education.

Criterion Question Selection

Once the list of tasks were selected a number of preliminary criterion questions were developed and carefully analyzed by the project staff. The basic purpose of the criterion questions was to identify the tasks which were more important in certain aspects of planning personnel preparation programs. In the final analysis it was determined that at least three key criteria are important for planning programs. First, it is especially important to know the relative amount of time personnel spend performing

the tasks when working with special needs learners during a given time period. In certain school districts or states, selected personnel responding to the questionnaire (e.g., vocational teachers) may not have responsibility for performance of the task as a result of state regulations, local or state guidelines, or certification mandates.

A second and perhaps more crucial question is the criticality of successful task performance to the overall effectiveness of the educational program and services provided to special needs learners. Some tasks may require a relatively short period of time to perform, but their successful performance may be highly critical to the overall program. The relative importance or criticality of certain tasks provides strong justification for including or excluding them from the training program.

The final criterion question selected was specifically focused upon inservice training programs. First, it asked the respondents to assume the role of a local educational agency professional with whom he/she was most familiar (e.g., resource room teachers, work coordinators, vocational teachers, counselor, etc.). Once having assumed the role, the person was to consider to what extent he/she has a need to know more about the task. The possible responses were reported on a 5-point scale ranging from "none" (1) to "much more" (5). This question was included because of its cruciality in assessing the current need for inservice on selected tasks as perceived by practicing educators.

Instrument Development

A three-page instrument containing the list of 49 tasks and the three criterion questions was assembled and pilot tested with teacher educators, and local vocational and special education personnel prior to the workshop. Revisions and refinements were made in the wording of the task statements as well as in the directions to the respondent.

Prior to the national workshop an initial version of the Professional Task Analysis Questionnaire was distributed to 26 secondary-level, vocational and special education teachers and administrators. All of the individuals included in this test sample were employed in an east central Illinois school district near the University of Illinois. Eighteen usable questionnaires were returned. The purpose of the test was twofold: (1) to debug, and refine the instrument format, content, and procedures for administration, and (assuming that no major changes were needed) (2) to collect usable data from local educators regarding the list of professional tasks for the eventual purpose of comparing local educator perceptions against those of the teachers educators attending the workshop. Although the sample was small and drawn from a single school district, it was felt by the project staff that the local educator perceptions would provide a somewhat different, yet useful perspective for comparison with the views of teacher educators engaged in planning personnel preparation programs.

Presentation and Analysis of Data

This analysis of data section will include the data collected from local educational agency personnel, (11-13) as well as the primary data which were collected from the teacher educators and state office of education personnel during the workshop (11-57). The tables on the following pages present the means and ranks (in parentheses) for the professional tasks for two of the criterion questions: (1) How critical is successful performance of the task to the overall program effectiveness? and (2) To what extent do you perceive a need to know (learn) more about the task.

Only two of three criterion questions addressed by the questionnaire were included in the data analysis. Summary data for the question regarding the relative amount of time spent performing the task were not included because its generalizability is extremely limited. It was pointed out during the workshop that the amount of time a professional spends performing a task is strongly influenced by situation-specific or state-specific factors such as class size, amount of planning time, or state certification guidelines.

General Trends

Several interesting observations can be made after inspection of the data collected from teacher educators and local school personnel. Even though the national workshop group was asked to consider themselves in the role of local school personnel, their mean responses on all tasks for all questions were higher on all except one of 147 responses. The national workshop participants rated themselves as spending relatively more time performing all of the tasks than did the local school personnel. On the average the reported relative time spent by the teacher educators was 1.14 mean scale points higher on the seven-point relative time spent scale.

The national workshop participants rated nearly all of the tasks as being relatively critical to overall program effectiveness. The local school personnel, on the other hand, rated nearly all the tasks as being "important" in criticality. The grand criticality mean from the local school personnel was 2.97, while the national workshop participants rated the criticality of the tasks considerably higher (3.72), a difference in grand means of .75 on the five point scale.

The same trend continued in the ratings of the need to know more about the task. This question, which attempts to measure the perceived need for or interest in inservice programs, provided some interesting responses. The local school personnel in the sample of one district appeared generally to feel they already had sufficient information regarding the tasks as they pertained to working with special needs learners. Their grand mean rating of the task was 2.60 which was below the midpoint of the scale (3), which was defined as "yes, a bit more." The national workshop respondents on the

other hand rated the perceived need for inservice on the tasks somewhat higher at 3.20. Although the role playing teacher educators felt there was generally a greater need to obtain more information, they were in closer agreement on this question with the local school personnel than on the previous questions regarding relative time spent and criticality. For this question the grand mean difference was only 0.60.

The only task on the questionnaire for which the mean response of the local school personnel was higher than the response of the teachers educators was "coordinate with instructional planning in academic areas." The local school personnel rated this higher as an area of perceived inservice need (2.94), than did the teacher educators (2.91).

Teacher Educator Perceptions

The 54 teacher educators and state office of education personnel attending the national workshop emphasized the criticality of a number of the 49 tasks included on the Professional Task Analysis Questionnaire. Table 9 on the following page presents the means and ranks of 15 tasks which the national workshop respondents rated the highest in terms of criticality and perceived area of need for additional information or inservice training. Keep in mind that the national workshop respondents were asked to place themselves in the role of a local educator when responding to the criterion questions for the 49 tasks. The general reaction from the workshop participants following the activity seemed to indicate that some had difficulty in assuming this role because they felt they were not totally familiar with the contemporary roles of local school personnel and that the roles with which they were familiar varied extensively in terms of the criticality of the performance of certain tasks.

Six of the 15 tasks were high in both criticality and perceived need for additional information. These tasks emphasized the need to analyze the occupational interests and aptitudes of special needs students, as well as to identify appropriate instructional techniques and materials. Sequencing of instruction and the on-going evaluation and upgrading instruction were also considered highly important in both areas.

Six tasks were also identified as being highly critical to overall program effectiveness, but not necessarily representing competencies that the teacher educators felt local school personnel were highly interested in improving. These highly critical, but less training emphasized tasks included: (1) collaborating with other professionals and parents in the student assessment process, (2) identifying available assessment instruments, (3) coordinating instructional planning in academic and vocational areas, (4) developing performance goals and objectives for individual students, (5) providing reinforcement for learning, and (6) providing career counseling and guidance.

Table 9

Highly Rated Tasks: National Workshop Respondents (N=54)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|--|---|---|
| | <u>Rating¹</u> (\bar{X} >4.00) | <u>of Need Rating¹</u> (\bar{X} >3.50) |
| 1.04 Analyze students' occupational interests and aptitudes | 4.11 (6) | 3.76 (4) |
| 1.06 Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs | 4.02 (11) | |
| 1.07 Administer or use diagnostic assessment techniques | | 3.78 (3) |
| 2.06 Identify available assessment instruments appropriate for special needs learners | 4.00 (12) | |
| 2.09 Plan a sequence of modules or units of instruction according to the learner's needs | 4.11 (6) | 3.57 (5) |
| 2.10 Coordinate with instructional planning in academic areas for students with learning problems (reading, math, and other academic areas required for graduation | 4.11 (6) | |
| 2.11 Develop individual students performance goals and objectives | 4.06 (10) | |
| 2.13 Identify instructional techniques appropriate for special needs learners | 4.44 (1) | 3.81 (2) |
| 3.09 Select or modify instructional materials appropriate for different special needs learners | 4.09 (9) | 3.50 (8.5) |
| 3.10 Develop instructional materials for special needs learners | 4.11 (6) | 3.50 (8.5) |

Table 9 (continued)

Highly Rated Tasks: National Workshop Respondents (n=54)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|--|---|---|
| | <u>Rating¹</u> (\bar{X} >4.00) | <u>of Need Rating¹</u> (\bar{X} >3.50) |
| 3.15 Provide reinforcement for learning | 4.42 (2) | |
| 3.16 Provide career counseling and guidance | 4.11 (6) | |
| 3.21 Train employers and supervisors to work effectively with special needs learners | | 3.56 (6) |
| 4.07 Evaluate and upgrade the effectiveness of instruction | 4.13 (3) | 3.91 (1) |
| 4.08 Conduct a comprehensive evaluation of the total special needs program | | 3.52 (7) |

¹Ranks in parentheses

It is also helpful to review the tasks to identify those which the teacher educators felt were least important. Table 10 on the following page identifies five tasks for which the mean criticality rating was less than 3.25, and 11 tasks for which the mean rating of perceived need for additional information was less than 3.00. Only two of the tasks were rated low in both areas. "Organizing and using a 'buddy system'" was the only task of the 49 which rated below the "important" level in criticality (3.0) at 2.65. This task was also the least important as a perceived area of need for inservice or additional information. In addition to this task, "Developing, using and evaluating job samples" was rated low in terms of general importance.

LEA Personnel Perceptions

The 18 local education agency personnel who returned usable questionnaires for the professional task analysis were employed in both junior and senior high schools. The sample included 14 vocational educators, two special educators, and two counselors. As noted earlier, the ratings provided by the national workshop respondents tended to be considerably higher than those provided by the local school personnel. Thus, different cutoffs were selected for identifying the high and low rated tasks. As shown in Table 11, only five tasks received mean criticality ratings above 3.50 while eight tasks were rated above 2.90 on the perceived area of need question. The local school personnel clearly indicated that they felt "analyzing a special needs student's occupational interests and aptitudes" was both highly critical (3.77), and an area of needed inservice training effort (3.06). This was the only task which rated high on both **questionnaire**.

Other highly critical tasks (above a 3.50 mean rating) included: (1) collaborating with other educators and parents in evaluating the learner's educational needs, (2) providing reinforcement for learning, (3) identifying and controlling problem behaviors in the classroom, and (4) developing a rationale, program goals, and philosophy for a special needs program.

Seven other tasks also received fairly high ratings as area of perceived need for more information, perhaps in the form of inservice training. The general areas of perceived information need included: (1) evaluating and upgrading instruction, (2) analyzing clusters to determine the competencies needed for the world of work, (3) developing performance goals and objectives, (4) modifying equipment and facilities, (5) assessing student performance, (6) planning sequences of instructional units, and (7) coordinating instructional planning in academic areas.

Table 10

Low Rated Tasks: National Workshop Respondents (N=54)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|---|---|---|
| | <u>Ratingⁱ</u> (\bar{X} <3.25) | <u>of Need Ratingⁱ</u> (\bar{X} <3.00) |
| 1.02 Analyze local or regional job market and employment trends | 3.22 (4) | |
| 1.03 Identify occupations and clusters of occupations | 3.24 (5) | |
| 2.01 Establish and/or use program advisory committees | | 2.83 (5.5) |
| 2.10 Coordinate with instructional planning in academic areas for students with learning problems (reading, math, and other academic areas required for graduation) | | 2.91 (8) |
| 3.02 Consult with other teachers to facilitate adequate performance of students in classes outside of the career-oriented special program | | 2.87 (7) |
| 3.04 Develop, coordinate, and evaluate a community relations program | | 2.76 (4) |
| 3.06 Organize and use a "buddy system" for special needs learners | 2.65 (1) | 2.39 (1) |
| 3.07 Develop, use, and evaluate job samples designed to teach specific occupational skills | 3.09 (2.5) | 2.98 (10.5) |
| 3.08 Develop and use simulated job application and interview procedures | | 2.83 (5.5) |

Table 10 (continued)

Low Rated Tasks: National Workshop Respondents (N=54)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|---|---------------------------|-----------------------------------|
| | <u>Rating¹</u> | <u>of Need Rating¹</u> |
| | (\bar{X} < 3.25) | (\bar{X} < 3.00) |
| 3.11 Plan and coordinate off-campus work (on-the-job) instruction | | 2.70 (3) |
| 3.12 Plan and coordinate on-campus work (on-the-job) instruction | | 2.59 (2) |
| 3.13 Use instructional techniques that individualize instruction (e.g., peer instruction, small group instruction, or programmed instruction) | | 2.92 (9) |
| 3.19 Provide personal counseling | | 2.98 (10.5) |
| 4.03 Assess the cognitive performance of special needs learners | 3.09 (2.5) | |

¹Ranks in parentheses

Table 11

Highly Rated Tasks: Local School Personnel (N=18)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|---|---------------------------|-----------------------------------|
| | <u>Rating¹</u> | <u>of Need Rating¹</u> |
| | (\bar{X} >3.50) | (\bar{X} >2.90) |
| 1.01 Develop a rationale, program goals, and philosophy for a special needs program | 3.50 (4.5) | |
| 1.04 Analyze students' occupational interests and aptitudes | 3.77 (1) | 3.06 (3.5) |
| 1.06 Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs | 3.61 (2.5) | |
| 2.03 Analyze occupational/career clusters to determine relevant instructional content (competencies needed in the world of work) | | 3.11 (2) |
| 2.09 Plan a sequence of modules or units of instruction according to the learner's needs | | 2.94 (7.5) |
| 2.10 Coordinate with instructional planning in academic areas for students with learning problems (reading, math, and other academic areas required for graduation) | | 2.94 (7.5) |
| 3.15 Identify and control problem behaviors in the classroom using behavioral management techniques | 3.50 (4.5) | 3.06 (3.5) |

Table 11 (continued)

Highly Rated Tasks: Local School Personnel (N=18)

| <u>Professional Tasks:</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|---|---------------------------|-----------------------------------|
| | <u>Rating¹</u> | <u>of Need Rating¹</u> |
| | (\bar{X} >3.50) | (\bar{X} >2.90) |
| 3.16 Provide reinforcement for learning | 3.61 (2.5) | 3.00 (5.5) |
| 4.03 Assess the cognitive performance of special needs learners | | 3.00 (5.5) |
| 4.07 Evaluate and upgrade the effectiveness of instruction | | 3.17 (1) |

¹Ranks in parentheses

Three tasks were rated extremely low by the local school personnel in terms of their criticality to an effective special needs program, and their importance for possible future inservice education activities. "Preparing alternative assessment procedures; organizing a buddy system for special needs learners; and using diagnostic and prescriptive assessment techniques" all were considered at the bottom of the priority list for this sample of local school personnel. Table 12 also suggests that "training employers or job supervisors of special needs students," and "identifying available assessment instruments" were also viewed as relatively non-critical.

Table 12

Low Rated Tasks: Local School Personnel (N=18)

| <u>Professional Tasks</u> | <u>Mean Criticality</u> | <u>Mean Perceived Area</u> |
|---|---|---|
| | <u>Rating¹</u> (\bar{X} >2.51) | <u>of Need Rating¹</u> (\bar{X} >2.11) |
| 2.06 Identify available assessment instruments appropriate for special needs students | 2.33 (4) | |
| 2.07 Use diagnostic and prescriptive assessment techniques for planning instruction | 2.22 (3) | 1.88 (2) |
| 2.08 Prepare alternative assessment procedures | 2.11 (2) | 1.83 (1) |
| 3.02 Consult with other teachers to facilitate adequate performance of students in classes outside of the career-oriented special program | | 2.11 (4) |
| 3.06 Organize and use a "buddy system" for special needs learners | 2.00 (1) | 1.94 (3) |
| 3.21 Train employers and supervisors to work effectively with special needs learners | 2.50 (5) | |

¹Ranks in parentheses

Discussion

The most important observation to be made in reviewing the analysis of the data appears to be the drastic differences between the levels of importance of these 49 tasks as perceived by teacher educators and local school personnel. Even when teacher educators were asked to place themselves in the role of a local educator in their field (i.e. vocational education, special education, or counseling), they considered themselves as spending much greater amounts of time performing all of the tasks than did the local school personnel. This trend carried into the other criterion questions as well. As a group, the teacher educators felt all of the tasks except one was at least "important." On the other hand, the local school personnel rated more than half of the tasks (28) below the "important" level on the criticality scale. When asked to consider the tasks for which they felt additional inservice information was needed, the teacher educators and local school personnel were in relatively close agreement. The difference in the grand means for both groups on this question was less than .60. There were some striking differences, however, on selected tasks.

Seven tasks were included in the section of the questionnaire devoted to assessing program and learner needs. Of these seven tasks one stood out as being particularly important in the eyes of both the local school personnel and teacher educators. Analyzing the occupational interests and aptitudes of special needs learners was a task which required a relatively large amount of time, was viewed as highly critical, and was an area in which both groups desired additional information. This appears to reflect the difficulty educators have encountered in trying to collect valid and reliable data needed to assist special needs learners in making informed career preparation choices. This finding also likely reflects upon the general tendency of special needs learners to exhibit unrealistic career goals. Another assessment task that both groups felt was critical involves collaborating with other educators, specialists, and parents in evaluating the learner's educational needs. The importance of staffing and parental involvement in the assessment and placement process appears to have become widely recognized, perhaps as a result of the due process litigation and mandatory special education laws.

Thirteen tasks were included in the instructional planning section of the questionnaire. Both groups felt that instructional sequence planning was highly important as well as an area of additional information need. "Developing individual student performance goals and objectives" was a task which both groups viewed as critical and involving relatively large amounts of time, but when the local school personnel responses were considered, they felt more strongly that they needed additional information on how to write objectives than did the teacher educators. This suggests perhaps that public school personnel are still more vitally concerned with questions related to performance-based evaluation and accountability in the classroom.

Again, when the local school personnel responses were considered, they tended to feel that the use of assessment procedures was much less critical to instructional planning than did the teacher educators. The local school personnel also felt that there was a strong need to analyze occupational clusters to determine the competencies needed in the world of work. This task was rated relatively low in criticality by the teacher educators.

There appeared to be a strong consensus of agreement regarding three of the tasks in the implementing instruction section, but divided opinions on several other tasks. Both groups strongly agreed that organizing and using buddy systems (informal peer tutoring arrangements) was relatively unimportant. Selecting/modifying instructional materials was a task which both groups felt was critical and an area of additional needed information. Providing reinforcement for learning was the third task which reflected a strong positive consensus from both groups.

The local school personnel rated the identification and control of problem behaviors as relatively important while the teacher educators felt it only mildly important. The training of employers/supervisors to work with special needs learners was another area of disagreement. While the teacher educators thought it to be relatively important, the local school personnel rated it extremely low.

In the final set of tasks which emphasized evaluation of instruction and program, there was only one task which reflected a strong consensus of agreement. "Evaluate and upgrade the effectiveness of instruction" was considered highly critical by the teacher educators and relatively critical by the local school personnel. Both groups felt it was an important area of need.

Five of the seven tasks included in the evaluation section were considered strong areas of need by local school personnel. Evaluation of student performance, including the design and development of valid instruments and evaluation systems, were all areas in which the local school personnel wanted additional information. These tasks were rated as relatively critical, but not highly critical to program effectiveness.

Summary

The data generated by the Professional Task Analysis Activities raises a number of critical questions and challenges for those involved in personnel preparation. If teacher educators and LEA personnel don't agree as to which tasks are important for special needs personnel to perform competently, how can the former provide meaningful inservice education for the latter? Whose views should prevail for preservice preparation, or for inservice preparation? More importantly, how can these differing views be brought into harmony?

The Professional Task Analysis Activity began as an attempt to generate some degree of consensus among professionals involved in personnel preparation regarding the tasks needing to be performed to deliver effective vocational programming to special needs students. When one considers the divergent views of local school personnel and teacher educators, a number of problems appear which make it difficult to realize a high, or even moderate, degree of consensus. Empirical data are not available which clearly specify the tasks which teachers or other professionals should perform in order to realize maximum achievement by special needs learners. Numerous practitioners, teacher educators, and researchers have provided strong arguments that task analysis is not even a reasonable approach to program development in teacher education. They argue that with the vast range of individual differences in learners, it is not possible to conceptualize and analyze a teaching-learning model that is efficient and effective for all students, or even for "homogeneous" groupings. Similar problems arise because of the differences in school and community organization. There is also ambiguity about whose competence should be the criterion for judging the attainment of competence. These are but three of the problems raised by the notion of identifying and analyzing the professional tasks which special needs personnel need to perform and basing teacher education programs on this analysis.

There are, however, a number of positive aspects to the "process" of identifying professional tasks. Attempts to define performance goals assist universities in clarifying and justifying their priorities. Such attempts also lead to more thoughtful analysis and perhaps a better understanding of the instructional process. Moreover, it clarifies, for the teacher education student and the public, the goals of the effort, and provides a basis for the continuous assessment of goal attainment. Finally, the specification of professional tasks by teacher educators will likely result in more theory being translated into practice because of the emphasis on clinical experiences (Broudy, 1975).

This summary raises two major questions which must be addressed by those concerned with the preparation of special needs personnel. First, to what extent do the perceived benefits and limitations of the task identification process outweigh each other? Second, once one has identified and analyzed a series of professional tasks, how can informed and meaningful decisions be made from the data so as to design programs that will adequately prepare special needs personnel? There are no simple or singular answers to these questions.

One step, however, appears essential. In order to better understand the problems of preparing vocational and special education personnel, the individuals involved in the effort must openly and frequently discuss the problems they encounter or perceive. In both universities and LEA's this discussion should encompass the rationality of the competency-based approach, as well as the past and future goals and instructional processes of the program. In order for the communication to be productive and sustaining it must yield some positive results. Although an acceptable level of consensus on professional tasks was not attained in the Professional Task Analysis Activity in this national project, similar communicative/cooperative efforts, when done locally or on a statewide basis, are more likely to yield productive outcomes. Fewer and smaller geographical, institutional, legislative, certification, and policy differences will exist than were encountered in the national workshop.

It is vitally important that local educational agency personnel, state office personnel, and university educators as well as vocational and special educators collectively address the process and problems of personnel preparation which they confront. Reviewing and discussing the professional tasks which practicing special needs educators must perform successfully is an excellent beginning point.

PART III. MODELS FOR PREPARING SPECIAL NEEDS PERSONNEL

One of the major goals of the national workshop project was to identify a number of models or approaches to preparing special needs personnel. The ten universities which participated in the national workshop represent a series of viable approaches to the preparing of teachers, work experience coordinators, counselors, and other personnel to work effectively in providing vocational programming for the student with special needs. A number of different inter and intra university program and departmental arrangements can be found in this sample, as well as a variety of faculty and staff backgrounds.

The model program descriptions which are presented on the following pages are based upon the information provided in the mini-proposals, action plans, and follow-up reports. All of the standard and unique features of each program known to the project staff are included in the descriptions. No attempt has been made to compare the programs. Each appears to be well adapted to the institutional and geographical setting in which it resides.

The name, address, and phone number of the individual(s) currently responsible for administering the program is also provided. These individuals acted as team leaders during the national workshop project, and each has expressed a willingness to share ideas and communicate with persons interested in specific aspects of their program.

MODEL PROGRAM I: The University of Vermont

Program Title: *Professional Development Program for Vocational Educators of Students with Special Needs*

Overview: The University of Vermont Professional Development Program for Vocational Educators of Students with Special Needs represents a cooperative planning effort among the Department of Vocational Education and Technology in the College of Agriculture, the Department of Special Education in the College of Education, the School of Home Economics and the Graduate College, University of Vermont; the Department of Special Education and Pupil Personnel and the Department of Vocational Education, Vermont State Department of Education. The mission of this inter-departmental, inter-agency effort is to provide public secondary schools and Area Vocational Centers throughout the State of Vermont with competent, highly trained instructional and supervisory personnel to establish, maintain, and evaluate exemplary programs and services designed to maximize vocational education opportunities for students with special needs. This stated mission is consistent with and facilitates the Vermont State Department of Education's philosophy of educating special needs students in the least restrictive educational environment.

- Program Goals:** The specific personnel preparation goals of this program include:
1. Initiate and maintain an undergraduate program with major emphasis on the preparation of vocational education teachers of students with special needs through Diversified Occupations.
 2. Expand current efforts to provide undergraduate students preparing for careers in home economics education and occupational and practical arts education with the necessary understanding and competencies for effectively meeting the needs of special students in the least restrictive educational setting.
 3. Provide pre-service and in-service training for post-secondary and vocational-technical teachers to prepare them for working with special needs students.
 4. Provide in-service training for administrators, pupil personnel and guidance specialists, and related school personnel to assist them in providing supportive services to special needs students in Vermont's secondary schools and Area Vocational Centers.

Related objectives of this program are:

1. To provide state-wide consultation services to Diversified Occupations program personnel.

2. To conduct a needs assessment aimed at identifying additional areas in which to provide assistance and services to special needs programs and personnel.
3. To conduct research relative to the efficacy of existing vocational programs serving special needs students in the State of Vermont.

A unique aspect of these existing and anticipated programs at both the undergraduate and graduate level is the strong emphasis being placed on field-based experiences in Area Vocational Centers and the utilization of Performance-Based Professional Vocational Teacher Education Modules developed by the Center for Vocational Education at the Ohio State University, and currently being field-tested by the Vocational Education and Technology Department.

*Program Design/
Courses:*

The Vocational Education and Technology Department in the College of Agriculture, the Special Education Program in the College of Education, the School of Home Economics and the Vermont State Department of Education share a common concern for the preparation of personnel to work with special needs students in vocational education.

One full-time faculty member in the Vocational Education and Technology Department is assigned to develop and teach courses in the area of vocational education for special needs students. These courses are planned in cooperation with faculty members from the Special Education Program, the School of Home Economics and other personnel in the Vocational Education and Technology Department. Undergraduate Students from each of these programs are selectively enrolled in courses offered by the Vocational Education and Technology Department.

In addition, the Special Needs faculty specialist in the Vocational Education and Technology Department teaches selected units in appropriate courses offered by the Department of Home Economics, and conducts monthly in-service meetings with Diversified Occupations teachers at various Area Vocational Centers around the state.

*Future Program
Development:*

Projected program expansion objectives will include the planning and implementation of:

1. An undergraduate major leading to the Bachelor of Science degree in Occupational and Extension Education with a major concentration in vocational education for students with special needs.

2. A 30 credit hour graduate program for vocational instructional personnel leading to the M.Ed. degree in Occupational and Extension Education in the field of vocational education for students with special needs.
3. A 60 credit hour graduate program designed to prepare professional special needs personnel for leadership positions in Area Vocational Centers throughout the State of Vermont. This program, consisting of full-time course work, laboratory experiences, and an internship, will represent a cooperative effort between the Vocational Education and Technology Department and the Graduate program in Special Education, College of Education.

Certification: Students successfully completing this program will qualify for certification as a Consulting Teacher with specialization in the area of vocational education for persons with special needs.

For additional information, write:

Dr. Al M. Lampe
Assistant Professor and Program
Coordinator
Department of Vocational Education
and Technology
University of Vermont
Burlington, VT 05401
(802) 656-2001

MODEL PROGRAM II: Rutgers, the State University

Program Title: *Secondary Teachers of the Handicapped/Disadvantaged*

Overview: The Secondary Teachers of the Handicapped is a credit program at the Undergraduate and graduate levels for persons working with or seeking to enter the field of secondary education for students with special needs (handicapped and disadvantaged). The program offers courses for in-service teachers leading to certification or endorsement as a Classroom Teacher of the Handicapped, as well as an undergraduate program leading to the B.S. degree in Special Education.

Program History: Since 1970-71, Rutgers College has been planning for the establishment of a program for the preparation of Secondary Teachers of the Handicapped and Disadvantaged.

Since 1971-72 and 1972-73, assisted by supporting grants from the Vocational Division of the State Department of Education of federal funds under P.L. 90-576 and P.L. 92-318, a faculty member and clerical assistant were employed to study the implications of the establishment of such a secondary special education program. An Advisory Committee was formed including representatives from both the Vocational Division and the Special Education Division of the New Jersey State Department of Education, the Vocational-Technical Department and the Special Education Department of the Rutgers Graduate School of Education, the New Jersey Rehabilitation Commission, and public school representatives including superintendents, principals, and teachers.

As a result of these efforts, in 1973 an undergraduate major in Secondary Special Education was established at Rutgers College. The courses have been offered in the evening, so as to be available both to the Rutgers College undergraduates and in-service teachers from the public schools.

Courses: Seven courses are required for the certification as a Classroom teacher of the Handicapped and are the courses offered most frequently. However, a total of 17 courses are generally included in the Secondary Teachers of the Handicapped and Disadvantaged program. The course titles are listed below. Most of these courses are usually offered in the late afternoon and evening to accommodate the in-service teachers. Those course titles with an asterisk (*) are required for certification.

| | |
|--|-------|
| * Teaching Exceptional Children | Cr. 3 |
| Community Organization and the Schools | Cr. 3 |
| * Nature and Needs of the Handicapped Adolescent | Cr. 3 |

| | |
|--|-------------|
| Inter-Agency Resources for the Handicapped | Cr. 3 |
| * Secondary Programs for Students with Special Needs | Cr. 3 |
| Exploration of Occupational Skill Areas | Cr. 2, 2, 2 |
| * Occupational Analysis and Placement of the Handicapped | Cr. 3 |
| Introduction to Vocational Rehabilitation | Cr. 3 |
| * Materials and Methods in Secondary Special Education | Cr. 3 |
| * Curriculum Development in Secondary Special Education | Cr. 3, 3 |
| * Bio-Social Aspects of Disability | Cr. 3 |
| Practicum in Employment Orientation of the Handicapped | Cr. 3 |
| Guidance and Counseling with the Handicapped | Cr. 3 |
| Organization and Administration of Special Education | Cr. 3 |
| Introduction to Vocational-Technical Education | Cr. 3 |
| Principles of Vocational Career Development | Cr. 3 |
| Teaching the Disadvantaged | Cr. 3 |

Certification:

By completing the seven core courses, the preservice or inservice teacher completes the Classroom Teacher of the Handicapped Endorsement Program. The person is then eligible for a regular Classroom Teacher of the Handicapped certificate, in addition to regular certification in his/her major teaching field.

Degrees:

At the undergraduate level the program leads to a B.S. degree in Special Education. Undergraduates as well as graduate students can obtain the Classroom Teacher of the Handicapped Endorsement while working on majors in fields such as Vocational-Technical Education. Special arrangements have been developed with the Graduate School of Education which permits graduate students, with the approval of their advisor, to take the upper level undergraduate courses for graduate credit as part of their masters or doctoral degrees in Special Education and Vocational-Technical Education.

Enrollments:

During the 1974-75 school year, thirteen of the courses in the program were offered. The enrollment in these courses totalled 468. Of this total 303 were in the preservice program and 165 were inservice students.

For additional information, write:

Dr. Allan F. Rosebrock
Chairman
Department of Education
Rutgers College
New Brunswick, N.J. 08903
(201) 932-7101

MODEL PROGRAM III: University of Pittsburgh

Program Title: *Preparing Vocational Teachers to Mainstream Special Needs Students*

Overview: This program has both an inservice and preservice component. During 1975-76, two competency-based, individualized courses for undergraduates were developed. The courses, which were designed primarily for future vocational teachers, emphasized techniques and strategies for mainstreaming special needs students.

**Inservice Program
Description:**

The program designed by the Vocational Education and Special Education Departments at the University of Pittsburgh for the Western Pennsylvania region is currently funded by the State Office of Education, and is designed to prepare eight vocational educators to work as change agents at their home schools in facilitating the acceptance of handicapped students into regular programs. These teachers came to the University as full-time students beginning in January, 1976. By the end of Phase I of the program (July, 1976), these teachers will have developed the following competencies:

1. Knowledge of the characteristics and capabilities of educable mentally retarded (EMR) students;
2. Diagnostic skills needed to select and place EMR students in the vocational classroom;
3. The ability to develop an individual course of study for EMR students in their content area;
4. Skill in helping other teachers in the participant's home school to individualize courses of study;
5. Knowledge of the resource center for special education available in Western Pennsylvania;
6. Ability to modify available curricular methods and materials to meet the instructional needs of the EMR population.

The teachers will acquire these competencies through a series of intern experiences, seminars, and specially designed courses.

A second developmental phase has been funded which continues the program so that these same teachers can develop the following competencies during 1976-77:

1. Knowledge of the characteristics and capabilities of categories of special education students other than EMR;
2. Diagnostic skills needed to select and place all categories of special education students in appropriate vocational content areas,

3. Skill in developing cooperative work experiences for special education students; and
4. Skill in writing proposals to obtain funding for special education projects.

During the second phase, the University of Pittsburgh staff plans to bring external studies courses dealing with vocational/special education to the schools participating in the program. This service will provide the needed support system for the implementation of the special education programs developed by the participants during Phase II of this program.

The directors of area vocational schools play a key role in the success or failure of this project. Their support will be solicited during a two-to-three day retreat designed to sensitize them to the need for mainstreaming the handicapped. Directors electing to participate in the future development of a program to mainstream the handicapped will designate one or two teachers from their school who will be released from their teaching duties for two semesters to prepare to assume the role of change-agent. The director, by designating and releasing one or more teachers to prepare for the role of change-agent, will be committing his school district to moving ahead in the installation of programs designed to promote the education of the special/vocational student.

The teacher will develop into a change-agent through a three-phase program. Phase One focuses on theory and practice in designing special/vocational training sequences for various program area and time blocks. Phase Two provides for applied work and consultation, focused on a "back home" project, with the project staff, consultants in specialized areas, and the administrative staff of the teacher's vocational school. Phase Three includes the installation of the innovative system and the formative and summative evaluation of the program. Support will be continued by the project staff during this phase and terminated when the change has been stabilized.

Preservice Program

Description:

The preservice courses for vocational education personnel were developed jointly by the Vocational Education and Special Education Departments. During the Spring term of 1976 two courses which emphasized various aspects of mainstreaming were developed and pilot tested with 25 prospective vocational teachers.

Future Program

Development

Activities:

The program initiators plan to complete several additional activities in the near future to expand both the inservice and preservice program components:

1. Modularize and mediate the two undergraduate courses on mainstreaming.

2. Conduct a comprehensive summer workshop for vocational teachers
3. Develop an option in the graduate program which will provide dual certification in vocational/special education.

For additional information, write:

Professor Shiela Feichtner
Professor Tom O'Brien
Department of Vocational Education
2504 Cathedral of Learning
University of Pittsburgh
Pittsburgh, PA 15260
(412) 624-6167

MODEL PROGRAM IV: Florida Consortium (University of Florida, Florida State University, Florida Technological University, and the Florida Learning Resources System.)

Program Title: *A State Plan for Preparing Vocational Educators who Work with the Handicapped*

Overview: The Florida program is an ambitious plan designed to create a network of communication around the state. This approach also involves program development, a delivery system, and evaluation plan for improving teacher education for those educators who work in vocational areas with the handicapped.

Program Goals: The short term goals for this program include:

1. To complete a statewide needs assessment in vocational education for the handicapped.
2. To bring together professionals in vocational education and special education to provide for improved communication between the two.

The long term goals for this program include:

1. To coordinate the vocational education and special education teacher training activities in the State of Florida.
2. To develop a State Model to provide joint graduate training and research.
3. To provide a system for disseminating vocational/special education materials throughout the State.
4. To develop a systematic process for evaluating vocational programs for the handicapped that are offered by the State.
5. To develop a systematic process for evaluating special/vocational teacher training programs.
6. To assist in the establishment of the State's long-range goals.

**Program
Strategies:**

1. Establish a State Task Force for Vocational Education and Rehabilitation of the Handicapped to prioritize and develop programs to meet the needs identified in the current needs identified in the current needs assessment. This Task Force would also attempt to coordinate teacher training and research.
2. Utilize the Florida Learning Resources System to provide massive inservice training, as needed, to vocational and special educators.

3. Conduct an annual meeting of all persons who direct summer workshops for vocational teachers of the handicapped for the purpose of sharing materials, ideas, methods, etc.
4. To utilize the existing Florida Learning Resource System's newsletters to disseminate appropriate vocational/special education materials to the general public as well as educational agencies.
5. To join forces with other agencies and systems (such as the Vocational-Technical Education Curriculum System) to insure that recognition is given to handicapped populations.
6. To develop a model for meeting the needs of the handicapped in vocational education which may be utilized and evaluated by Florida and other States in DHEW Region IV.

For additional information:

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MODEL PROGRAM V: Kent State University, Ohio

Program Title. *Comprehensive Occupational Education Development Program (COED)*

Overview: With EPDA support, Albright, Nichols, and Pinchak (1975) have obtained data descriptive of the precepts of Occupational Work Adjustment (OWA), Occupational Work Experience (OWE), and vocational education specialists and supervisors working with the handicapped and/or disadvantaged about teacher competencies in several areas. K.S.U.'s COED model is based upon the fundamental working assumption that the competencies of Program Management, Curriculum, Classroom Management, Coordination, Remediation, and Counseling are also relevant for special education personnel such as EMR school-work coordinators, sheltered workshop coordinators, and other needed personnel not presently defined in terms of extant role prescriptions (i.e., new types of staff are needed). The data collection instruments and proceedings employed on vocational teachers will be used to gather data on special education personnel and then compare these data. The goal is to integrate and improve the training of vocational and special educators.

- Program Goals:
1. Preparing, via in-service education, vocational teacher-coordinators for Ohio's disadvantaged work experience programs, C.E.T.A. instructors and Special Needs Instructors.
 2. Expansion and strengthening of undergraduate programming to prepare teacher-coordinators in one component area of special needs vocational education, disadvantaged work experience programs.
 3. Incorporating the findings of the 1974-75 EPDA research study "Identifying Competencies for Teachers of Disadvantaged and Handicapped Youth" into present pre-service and in-service programs for teachers of work experience programs for the disadvantaged.
 4. Designing and implementing, through the combined expertise of vocational and special educators, a comprehensive teacher training program to prepare vocational personnel to serve the unique characteristics of special needs youth and adults.

Program Design: The undergraduate program preparing teacher-coordinators for disadvantaged work experience programs is interdisciplinary. Students pursue coursework in vocational education, special education, urban education, psychology and sociology to fulfill professional needs. This program, however, only pertains to two component areas within the total field of special needs vocational education.

1. Implementing, through joint efforts of vocational and special education, programs to prepare instructional personnel.
2. Creating and operationalizing, through cooperative efforts of vocational and special education staff, a program to prepare a variety of coordination personnel.
3. Operationalizing a joint program to prepare administrators in the area of special needs vocational education.
4. Conducting research to refine the programs within the comprehensive model and disseminate information to institutions participating in the national workshop.

Future Program

Development:

1. Seek major external funding to support articulation of joint programs(s).
2. Seek additional staff with Vocational Education and Special Education background for joint appointments.
3. Work closely with Ohio State Department of Education, Vocational Education/Special Education, and with EPDA personnel in the state office.
4. Utilize Advisory and Steering Committees to enhance communication and cooperative program development.
5. Extend use of competency based approach.
6. Continue to use research, assessment and evaluation by field personnel to guide program development, articulation and implementation.

For additional information, write:

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Kent, Ohio 44242
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MODEL PROGRAM VI: Texas A & M University

Program Title: *Establishing Network for Career Opportunities Unlimited Through Education as Rehabilitation: Project ENCOUNTER*

Overview: In order to service handicapped youth in Texas an additional 995 vocational education teachers, 595 vocational adjustment coordinators and numerous vocational education and special education administrative and support personnel are needed. This shortage can be alleviated through the commitment to implementing a professional development program to train special/vocational personnel. This is the direction of the Texas A & M personnel preparation program.

Program Goals: The major objectives of the professional development program at Texas A & M University are:

1. The content specification and development of a prescribed set of single concept instructional modules.
2. The infusion of selected modules into existing undergraduate and graduate level courses in special education, vocational education, counselor education, and educational administration.
3. The utilization of selected modules in university-sponsored, regional educational service center-sponsored, and local educational agency-sponsored inservice training programs.
4. The sponsorship of a series of special emphasis workshops for: a) classroom personnel who have frequent contact with handicapped adolescents, b) support personnel including supervisors, counselors, work placement coordinators, supportive services staff, and c) social services personnel from such agencies as Vocational Rehabilitation, Mental Health, and Mental Retardation.
5. The establishment of a visible, comprehensive professional development program at the undergraduate and graduate levels for individuals who seek certification as vocational adjustment coordinators, vocational teachers for the handicapped, or occupational orientation teachers for the handicapped.

Program Design: Texas A & M University is implementing over a three year period a professional development component within its existing special education and vocational education programs which focuses on the preservice and inservice training of vocational adjustment coordinators, and special vocational instructors, and support staff. The university is implementing the training components through the development of a series of modules which address the various competencies needed by special vocational instructors and support staff.

The modules are developed by the College of Education faculty in conjunction with a team of experts from various educational sectors and community agencies. Classroom teachers and other practitioners in the field contribute materials, such as reports of successful learning activities, which they have developed or used.

When sufficient resources have been developed, the project staff will begin extensive training activities at the undergraduate and graduate levels through the sponsorship of formal courses, workshops, and non-credit training activities. Support for the proposed professional development program from the College of Education faculty, Texas Rehabilitation Commission, and the Texas Education Agency has been most encouraging.

For additional information, write:

Dr. Marc Hull
Research Associate
College of Education
Texas A & M University
College Station, TX 77843
(713) 845-2636

MODEL PROGRAM VII: University of Missouri-Columbia

Program Title: *Interdisciplinary Preparation of Personnel to Provide Vocational/Career Education for Special Needs Students*

Overview: Faculty members in the programs of Vocational Teacher Education, Special Education and Counselor Education at the University of Missouri have frequently been involved in cooperative, interdisciplinary efforts. In addition, the University has been in close contact with the State Department of Education to upgrade the competencies of instructional personnel who work in special/vocational programs.

- Program Goals:
1. Identify the major competencies needed by special education, vocational education, and guidance personnel to work effectively with special needs students in vocational education. Past research by Brolin, Clark and others as well as a series of meetings with various types of educators and state department personnel will be utilized to identify the needs and needed competencies.
 2. Design a pre-service graduate/undergraduate, integrative experiences specialization to prepare special education, vocational education, and guidance personnel to work with special needs students to enhance their career/vocational development in secondary and post-secondary programs.
 3. Determine the effectiveness of those experiences that result from B above. A formative-summative design will be utilized to ascertain trainee and program effectiveness.

- Future Program Development:
1. Design a pre-service undergraduate integrative experience specialization to prepare vocational education, special education and guidance personnel to work with special needs students to enhance their career/vocational development in secondary and post-secondary programs.
 2. Determine the effectiveness of those experiences, using a formative-summative design to ascertain trainee and program effectiveness.
 3. Design an in-service, graduate-undergraduate delivery system for integrative experience specialization to prepare vocational education, special education, and guidance personnel to work with special needs students to enhance their career/vocational development in secondary and post-secondary programs.

For additional information write:

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Services
6 Hill Hall
University of Missouri, Columbia, MO 65201
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MODEL PROGRAM VIII. University of Northern Colorado/Colorado State University

Program Title: Serving Teacher Responsibilities in Vocational Education (STRIVE)

Overview:

For several years the Special Education and Vocational Education departments at the University of Northern Colorado have cooperated in the preparation of teachers. Students pursuing a degree in special education are required to take a minimum of nine quarter hours in vocational education; those in all vocational education content programs are encouraged to take a minimum of nine hours in the Special Education Department in addition to a course in "Vocational Education for Learners with Special Needs" taught by the Vocational Teacher Education Department. In addition, Colorado State University has a strong commitment to providing pre-service and in-service education in the area of the disadvantaged and handicapped. The Department of Vocational Education presently employs two full-time professionals in this area. The Department has also conducted numerous workshops and institutes in the area of providing education for the disadvantaged and handicapped. The College of Professional Studies has a special task force that is coordinating all the programs and courses that fall within the area of learning disabilities.

Program Goals:

1. To assist undergraduate vocational teacher education students to be aware of needs of special needs students.
2. To increase awareness of vocational education in special education students.
3. To make relevant materials on special needs students and programs available to all students.
4. To increase special needs and regular vocational teachers' competencies and skills in developing Individualized Prescriptive Education (IPE) programs for their special needs students.
5. To provide on-site consultative services for special needs teachers on request.
6. To provide intensive, short-term summer workshops to upgrade the skills of special needs and regular vocational teachers in working with special needs students.
7. To train all vocational teachers in processes needed to more effectively integrate special needs techniques, methods and materials into regular programs.

8. To develop unique student teaching experiences for all undergraduates to include more relevant activities oriented toward special needs students, programs, and work experience requirements for students with special needs.
9. To develop a more effective program for recruiting teachers to work with special needs programs.

Program Design:

1. Courses are offered every quarter regarding special needs and adaptation of co-op to special needs programs (including work-experience and work-study in special education programs).
2. A Vocational Teacher Education Resource Center including media, and curriculum materials related to state and national special needs programs has been established.
3. In-service workshops (30-50 contact hours) working with vocational teachers in IPE programming for special needs students have been conducted.
4. Consulting services to individual special needs programs and teachers to improve on-going programs are available.
5. A state-wide delivery system for special needs in-service programming which coordinates two teacher education institutions, geographic location of teachers, and the State Board for Community Colleges and Occupational Education has been developed.
6. Effective means have been established for identifying the special needs in-service requirements of all vocational teachers.
7. Identification of statewide resources (personnel, programs, facilities) for placement of student teachers, co-op students, and interns at undergraduate and graduate levels is underway.

Future Planned Developments:

1. Prepare instructional modules and/or courses to meet the needs of both pre-service and in-service vocational education teachers.
2. Review and revise State agency publications which provide guidance to vocational education teachers to emphasize accommodation of special needs students.
3. Develop credentialing standards for teaching special needs students in vocational education.

For additional information, write:

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Special Vocational Teacher Education
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University of Northern Colorado
Greeley, Colorado 80639
(303) 351-2939

Mr. Ralph Hunter
Special Needs Instructor
Department of Vocational Education
Colorado State University
Fort Collins, Colorado 80523
(303) 491-6317

MODEL PROGRAM IX: California State University at Long Beach

Program Title: *Interdisciplinary Program for Vocational Preparation of Special Needs Students*

Overview: California State University, Long Beach ranks as the largest among the nineteen campuses in the California State Colleges and Universities System. Its enrollment of 33,000 students places it first among public institutions of higher education in DHEW Region IX.

In the past several years CSULB has become one of the leaders in presenting programs to aid handicapped students. In 1974 the campus was singled out by the State of California to provide funds to support a two year pilot program bringing expanded services to handicapped students. Remarkable progress has been made in eliminating architectural barriers and in assisting handicapped students with problems they encounter while attending the University.

CSULB offers numerous vocational education credential, certificate, and degree programs. Integral to these programs is a very strong grouping of studies in career education. Both vocational education and career education have concern for continued service to those with special needs.

Nine departments prepare professionals to provide various services in the schools and other agencies of the community. These departments also contain a wide variety of contacts with special individuals. Included are on-campus instructional programs and off-campus community clinics, volunteer services, and allied efforts.

Program Goals: The overall goals of this program include:

1. Identify the contribution that each department or entity of the University currently makes or can make to the vocational/career development of individuals to serve those with special needs.
2. Identify individuals within each unit who will serve on an interdisciplinary committee and monitor unit efforts toward vocational/career development.
3. Develop an interdisciplinary team of professionals to plan and implement pre-service and in-service vocational/career training of personnel who work with individuals with special needs.
4. Administer an interdisciplinary program.

5. Identify additional resources which the University may utilize to achieve program objectives.
6. Emphasize evaluation processes as an integral part of the program.

Program Design: A program design is presented in Diagram I. It identifies the team and the vehicles available to the University in its training efforts. There are two emphases in that training.

1. Pre-Service. The University already contains the seeds of a dynamic effort in the vocational preparation of exceptional individuals as described. All must be coordinated so that the program will provide maximum benefit to professionals who wish to take training across disciplines.
2. In-Service. This is a more ambitious undertaking as it will require the development of a team of university and community participants who will be able to influence and train personnel in the areas of vocational/career development. This could be implemented through the traditional master's degree program, continuing education, and external degrees. Whenever expertise is necessary in an area not available or represented at CSULB, neighboring universities and allied agencies will be contacted through normal administrative channels, e.g., continuing education program and the Consortium of State Colleges and Universities.

*Future Program
Directions:*

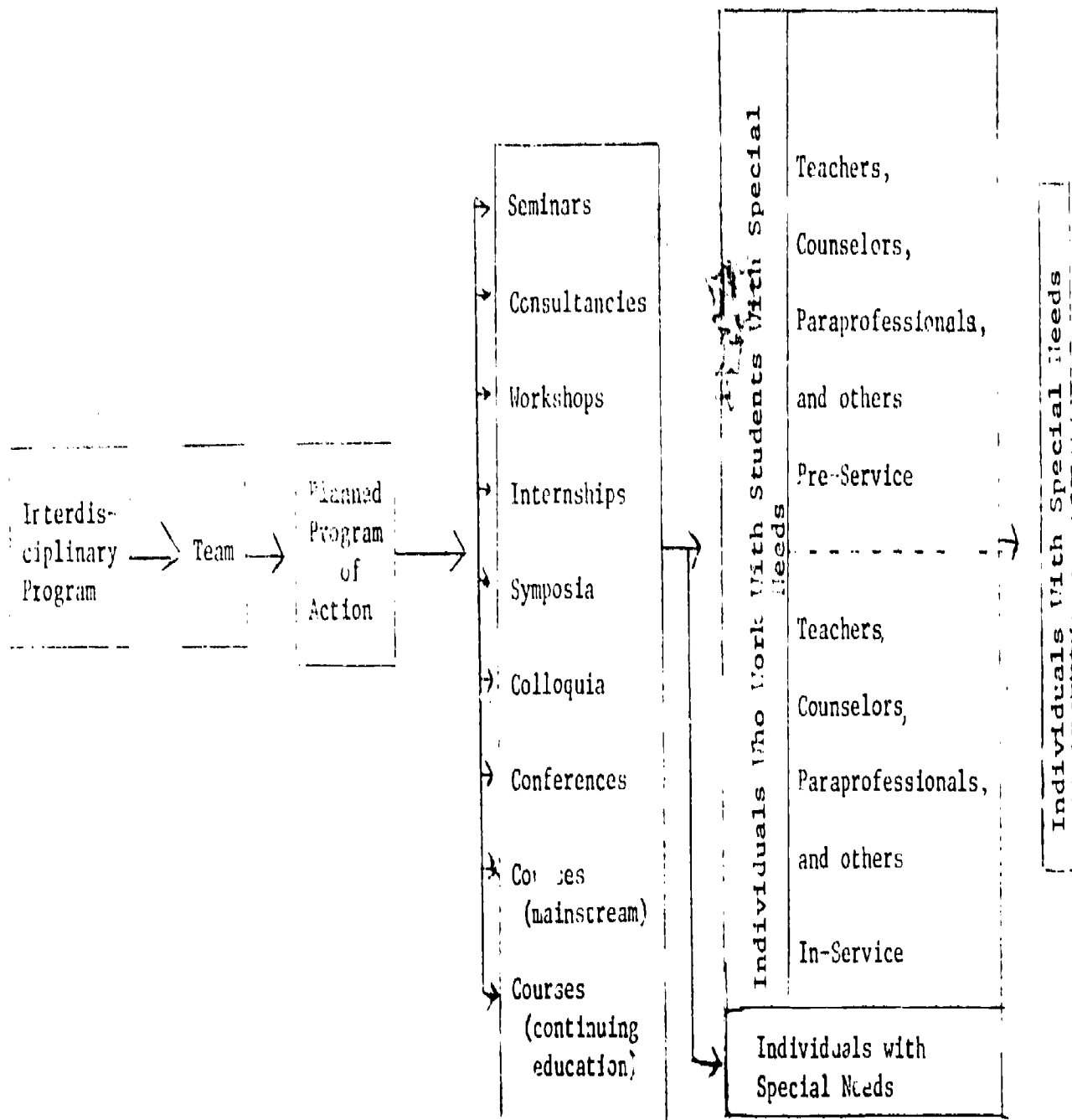
1. Increase employment potential of special needs students.
2. Increase the integration potential of special needs students.
3. Increase the utilization of the talents of several professionals who can contribute to the lives of special needs students.
4. Increase the positive attitudes of professionals toward the life potential of special needs students.
5. Increase communication between disciplines relevant to life potential of special needs students.

For additional information, write:

Dr. Charle Kokaska
Associate Professor and Coordinator
Special Education Program
California State University
Long Beach, California 90840
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DIAGRAM I

Planned Program Design Including Instructional Vehicles and Target Population



Why

Who

What

How, Where, When

For Whom

Diagram II Planned Program Design Including Instructional Vehicles and Target Population

MODEL PROGRAM X Oregon State University/University of Oregon

Program Title: *Vocational Education for Students With Special Needs*

Overview: Both Oregon State University and the University of Oregon are a part of the Oregon State System for Higher Education. Oregon State University has been chartered as the primary institution for providing teacher education in Vocational Education for the State of Oregon but does not have a teacher education program in Special Education. The University of Oregon has the only doctoral program in Special Education in Oregon but does not have a Vocational Education program.

Oregon State University's teacher training program for Vocational-Technical Education Students with Special Needs provides a continuum of service through two major components: preservice and inservice. The preservice component consists of instructional units which are infused into existing teacher education and leadership development programs. A variety of techniques are employed: seminars, self-instructional packages and field-based observation and practice. Each student's efforts are individually prescribed and controlled. The preservice component is located on Oregon State University's campus and is being developed and coordinated by a full-time specialist.

The inservice component is located at Oregon State University's Career Education Personnel Development Center in Portland and is coordinated by a full-time specialist. The specialist manages field-based workshops, seminars and courses, including the identification of inservice instructional needs of secondary school and community college vocational instructors, identifying and developing the reserve instructor bank, and serving as an expeditor of field-based inservice workshops, seminars and courses throughout the State of Oregon. The specialist also identifies, catalogs and develops resource materials, provides consultative services to cooperating agencies for the improvement of vocational personnel development for working with students with special needs; and serves as a communications link among local educational agencies, the State Department of Education, and universities.

As a part of the College of Education at the University of Oregon, the Department of Special Education provides master's and doctoral level preparation in Special Education and offers programs of study meeting Special Education certification requirements of the State of Oregon's Teaching Standards and Practices Commission (TSPC). In addition the University has taken a national leadership role through the Rehabilitation Research and Training Center in providing research and training in the rehabilitation of the mentally retarded and related disabilities. The Department of Special Education is currently

revising its teacher preparation program in special education to meet new state certification requirements. As part of the current revision, the feasibility of establishing a program for preparing special education teachers at the secondary level is being explored.

Program Goals:

1. All students enrolled in Vocational-Technical teacher education at Oregon State University will have the necessary competencies to identify the special needs of the disadvantaged and handicapped vocational student and to prepare, revise, or acquire instructional support.
2. Graduate students enrolled in Vocational-Technical Education leadership development programs will have the necessary competencies to plan and develop programs to meet the special needs of the disadvantaged and handicapped students.
3. All students in Special Education at the University of Oregon will have the necessary competencies to meet the special needs of the disadvantaged and handicapped vocational student.
4. Vocational instructors and support personnel in secondary schools and community colleges in Oregon will be able to provide special services to the disadvantaged or handicapped vocational student, including the identification of the handicapping or disadvantaging condition, prescription and implementation of instructional strategies, and completion of program evaluations.
5. Staff of the Vocational-Technical Education Unit of Oregon State University will have the necessary attitudes and competencies to implement instructional units on the disadvantaged and handicapped vocational students in existing undergraduate and graduate-level programs.

Program Design:

1. Oregon State University, University of Oregon, and Oregon Department of Education will conduct a two-day workshop to define roles of Special and Vocational Education practitioners when working with Vocational students with special needs.

Primary participants will be fifteen pairs of Special and Vocational teachers who work with each other to enable vocational students with special needs to attain desired competencies.

2. University of Oregon appoints one or more staff members of Oregon State University to the Secondary Special Education Curriculum Task Force.

3. Oregon State University appoints one or more staff members of the University of Oregon's Department of Special Education to the Vocational-Technical Education Unit's Special Needs Advisory Committee.

Future

Development:

1. OSU and UO jointly develop guidelines for a minor in Special Education for graduate students majoring in Vocational-Technical Education at OSU.
2. UO and OSU jointly develop guidelines for a minor in Vocational-Technical Education for graduate students majoring in Special Education at UO.
3. OSU completes initial infusion of instructional packages on working with Vocational students with special needs, including follow-up of graduates.
4. UO completes initial development of instruction on working with Vocational students with special needs, including follow-up of graduates.
5. All students enrolled in secondary-level Special Education teacher education at the University of Oregon and in Vocational-Technical teacher education at Oregon State University will have the necessary competencies to identify the special needs of the disadvantaged and handicapped vocational student and to prepare, revise, or acquire instructional support.
6. Graduate students enrolled in secondary level Special Education teacher education at the University of Oregon and Vocational-Technical Education Unit of Oregon State University will have the necessary attitudes and competencies to implement instructional units on the disadvantaged and handicapped vocational students in existing undergraduate and graduate-level programs.
7. Vocational instructors and support personnel, including Special Education teachers, in secondary schools and community colleges in Oregon will be able to provide special services to the disadvantaged or handicapped vocational student, including the identification of the handicapping or disadvantaging condition, prescription and implementation of instructional strategies, and completion of program evaluations.

For additional information, write:

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Dr. Andrew Halpern and
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Research and Training Center
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Department of Special Education
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List of Participants

NATIONAL TEACHER EDUCATION WORKSHOP ON VOCATIONAL EDUCATION
FOR SPECIAL NEEDS STUDENTS

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Occupational and Extension
Education*

*Harold Woodward
Consulting Teacher Program*

*Marilyn Osborn
Home Economics Education*

*David O. Wade
Consulting Teacher Program*

*Al M. Lampe
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tional Education*

*Larry Parsky
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*Linda Boyler
Vocational Education*

*Dean Garwood
State Department*

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*H. Feichtner
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*Gregory Patton
Vocational Education*

Wayne Grubb - State Department

REGION IV: *Florida Consortium*

*William Wargo
Vocational and Adult
Education (F.S.U.)*

*Jeanice Midgett
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*James Hensel
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REGION VI: *Texas A & M University*

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APPENDIX A
PROFESSIONAL TASK ANALYSIS QUESTIONNAIRE

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☐ Vocational Educator ☐ Special Educator

Directions: Listed below are several professional tasks which you, as a vocational or special educator, are likely to perform in working with special needs learners at the junior and senior high school level. Please respond by circling one number for each of the three questions for each task.

1.00 ASSESSING PROGRAM AND LEARNER NEEDS

- 1.01 Develop a rationale, program goals, and philosophy for a special needs program
- 1.02 Analyze local or regional job market and employment trends
- 1.03 Identify occupations and clusters of occupations
- 1.04 Analyze students' occupational interests and attitudes
- 1.05 Develop and use screening-referral processes for identification of students
- 1.06 Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs
- 1.07 Administer or use diagnostic assessment techniques

2.00 PLANNING INSTRUCTION

- 2.01 Establish and/or use program advisory committees
- 2.02 Identify a variety of community and governmental agency resources in planning instructional programs and services
- 2.03 Analyze occupational/career clusters to determine relevant instructional content (competencies needed in the world of work)
- 2.04 Identify the basic attitudes and competencies (e.g., finger dexterity or sequencing skills) required for employment in a given career
- 2.05 Collect and use available assessment information
- 2.06 Identify available assessment instruments appropriate for special needs students
- 2.07 Use diagnostic and prescriptive assessment techniques for planning instruction
- 2.08 Prepare alternative assessment procedures
- 2.09 Plan a sequence of modules or units of instruction according to the learner's needs
- 2.10 Coordinate with instructional planning in academic areas for students with learning problems (reading, math, and other academic areas required for graduation)

| | Relative Time Spent | | | | | | | Criticality | | | | | Area of Need | | | | |
|------|---|---|---|---|---|----------------------|---|---|---|-----------|---|--------------------|---|-----------------|---|----------------|---|
| | What is the relative amount of time you spend conducting this task? | | | | | | | How critical is successful performance of this task to the overall effectiveness of your program? | | | | | As a local educator working with special needs students, do I feel I need to know more about this task? | | | | |
| | Very little time | | | | | A great deal of time | | Unimportant | | Important | | Extremely critical | No | Yes, a bit more | | Yes, much more | |
| 1.01 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.02 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.03 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.04 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.05 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.06 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1.07 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.01 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.02 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.03 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.04 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.05 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.06 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.07 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.08 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.09 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

| | <u>Relative Time Spent</u> <i>What is the relative amount of time you spend conducting this task?</i> | | | | | | | <u>Criticality</u> <i>How critical is successful performance of this task to the overall effectiveness of your program?</i> | | | | | <u>Area of Need</u> <i>As a local educator working with special needs students, do I feel I need to know more about this task?</i> | | | | |
|--|--|---|---|----------------------|---|---|---|--|-----------|--------------------|---|----|---|----------------|---|---|---|
| | Very little time | | | A great deal of time | | | | Unimportant | Important | Extremely critical | | No | Yes, a bit more | Yes, much more | | | |
| 2.11 Develop individual student performance goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.12 Identify instructional resource personnel (e.g., reading specialists and bilingualists) capable of providing supportive help for special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2.13 Identify instructional techniques appropriate for special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.00 IMPLEMENTING INSTRUCTION | | | | | | | | | | | | | | | | | |
| 3.01 Use a variety of community and governmental agency resources in the delivery of supportive services and instruction | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.02 Consult with other teachers to facilitate adequate performance of students in classes outside of the career-oriented special program | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.03 Develop, utilize, and evaluate procedures for communicating with parents | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.04 Develop, coordinate, and evaluate a community relations program | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.05 Manage and modify when necessary the tools, equipment, facilities, or conditions in the learning environment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.06 Organize and use a "buddy system" for special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.07 Develop, use, and evaluate job samples designed to teach specific occupational skills | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.08 Develop and use simulated job application and interview procedures | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.09 Select or modify instructional materials appropriate for different special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.10 Develop instructional materials for special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.11 Plan and coordinate off-campus work (on-the-job) instruction | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.12 Plan and coordinate on-campus work (on-the-job) instruction | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.13 Use instructional techniques that individualize instruction (e.g., peer instruction, small group instruction, or programmed instruction) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.14 Employ techniques or principles of special instruction (e.g., discrimination learning or cue redundancy) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

| | <u>Relative Time Spent</u> <i>What is the relative amount of time you spend conducting this task?</i> | | | | | | | <u>Criticality</u> <i>How critical is successful performance of this task to the overall effectiveness of your program?</i> | | | | | <u>Area of Need</u> <i>As a local educator working with special needs students, do I feel I need to know more about this task?</i> | | | | |
|--|--|---|---|---|---|----------------------|---|--|-------------|--------------------|---|---|---|-----------------|----------------|---|---|
| | Very little time | | | | | A great deal of time | | Unim- portant | Import- ant | Extremely critical | | | No | Yes, a bit more | Yes, much more | | |
| 3.15 Identify and control problem behaviors in the classroom using behavioral management techniques | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.16 Provide reinforcement for learning | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.17 Provide career counseling and guidance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.18 Provide work adjustment counseling | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.19 Provide personal counseling | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.20 Provide and/or coordinate job placement services for special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3.21 Train employers and supervisors to work effectively with special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.00 EVALUATING PROGRAM AND INSTRUCTION | | | | | | | | | | | | | | | | | |
| 4.01 Develop instruments and procedures appropriate for assessing the achievement of special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.02 Design and implement a system for monitoring and feeding back student progress and achievement on a regular basis | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.03 Assess the cognitive performance of special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.04 Assess the affective performance of special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.05 Assess the psychomotor/perceptual performance of special needs learners | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.06 Obtain follow-up information on special needs students leaving or graduating from school programs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.07 Evaluate and upgrade the effectiveness of instruction | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4.08 Conduct a comprehensive evaluation of the total special needs program | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

APPENDIX B
INSTITUTIONAL ACTION PLAN FORMAT

INSTITUTIONAL ACTION PLAN

for

(Descriptive Program Title)

at

(University(s))

Developed by:

| | |
|-------|-------|
| <hr/> | <hr/> |
| <hr/> | <hr/> |
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at the

National Workshop on Vocational Education for Special Needs Students

University of Illinois, Urbana-Champaign

January 13-15, 1976

Section 1: NEEDS ASSESSMENT

In this section, please describe the need for the proposed program, program revision or expansion by providing background information, as well as an analysis of situational and organization variables and constraints.

Section 2: ACTION PLAN OBJECTIVES

In the space below, please outline the specific objectives for this undertaking. Enumerate the major observable and measurable outcomes of this plan of action on both a short-term (next 5 months), and long-term basis.

Short Term Objectives:

Long Term Objectives:

Section 3: STRATEGIES

Please describe below the strategies your team will use to attain the objectives specified in Section 2. What activities will be engaged in by the team members, individually as well as collectively, during the next 5 months for attaining the short term objectives? for accomplishing the long term objectives?

Short Term Strategies:

Long Term Strategies:

Section 4: RESOURCES

In the space below, please describe what resources your team will draw upon or need to obtain in order to effectively implement this plan. State, as explicitly as possible, how the team would utilize any follow-up resources that the staff of the national workshop project could provide.

Section 5: ANTICIPATED OUTCOMES

In addition to the observable outcomes listed in the Action Plan Objectives (Section 3), please speculate regarding any additional benefits or outcomes the team foresees occurring as a result of developing and implementing this action plan.

APPENDIX C

BIBLIOGRAPHY OF MATERIALS DISPLAYED

AT THE NATIONAL WORKSHOP ON VOCATIONAL EDUCATION

FOR THE SPECIAL NEEDS STUDENT

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Displayed at the National Workshop
on Vocational Education
for Special Needs Students
January 13-15, 1976

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Other Organizations to Contact.

American Foundation for the Blind, Inc. .
15 West 16th Street
New York, N.Y. 10011
telephone: (212) 925-0420

Field Offices in:

Washington, D.C.
Atlanta, GA
San Francisco, CA
Denver, CO
Chicago, IL

The Center for Studies in Vocational and Technical Education.
University of Wisconsin
Madison, WI 53715
Contact Person: Roger H. Lambert, Associate Director.

Jewish Employment and Vocational Service
1913 Walnut Street
Philadelphia, PA 19103

Materials Development Center
University of Wisconsin-Stout
Menomonie, WI 54751
Contact Person: Ronald R. Fry, Coordinator

The Protestant Guild for the Blind, Inc.
456 Belmont Street
Watertown, MA 02172
telephone (617) 926-4100
The Rev. Wesley C. Price, Director

APPENDIX D

PARTICIPANT QUESTIONNAIRE--PROFESSIONAL TASK ANALYSIS ACTIVITY

PARTICIPANT QUESTIONNAIRE

Professional Task Analysis Activity

As part of our effort to evaluate the effectiveness of the workshop, we would appreciate your assistance in completing this form. The results will assist the future planning of similar workshops.

Field: a. Special education . . . 1
(Circle one number)
b. Vocational education . . 2

Employed

as: a. University staff . . . 1
(Circle one number)
b. State staff 2

Workshop Group

Assignment: Group A . . . 1
(Circle one number) Group B . . . 2
Group C . . . 3
Group D . . . 4
Group E . . . 5

DIRECTIONS: Read each statement carefully and circle one of the five numbers following each statement. Your comments are considered important.

The main objective of the PROFESSIONAL TASK ANALYSIS ACTIVITY was to develop a list of tasks performed by local school personnel who are responsible for serving special needs students enrolled in vocational education programs.

1. The main objective of the Professional Task Analysis Activity was fully achieved.

1 Strongly Agree 2 Agree 3 Undecided 4 Dis- Agree 5 Strongly Disagree

Comment _____

2. The orientation to the activity did not clearly explain what was to be accomplished.

1 Strongly Agree 2 Agree 3 Undecided 4 Dis- Agree 5 Strongly Disagree

Comment _____

3. The workshop staff member in my group provided valuable assistance for the completion of this activity.

1 Strongly Agree 2 Agree 3 Undecided 4 Dis- Agree 5 Strongly Disagree

Comment _____

4. This activity will not be very beneficial in developing the "action plans."

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | |

Comment _____

5. The length of time for the activity was (please circle one):

| | | |
|----------|------------|-----------|
| 1 | 2 | 3 |
| Too long | Sufficient | Too short |

Comment _____

6. The size of the groups for this activity was:

| | | |
|----------|------------|-----------|
| 1 | 2 | 3 |
| Too long | Sufficient | Too short |

Comment _____

7. Would changing the composition of your group have improved the activity?

| | | |
|-----|-----------|----|
| 1 | 2 | 3 |
| Yes | Uncertain | No |

If yes, please describe _____

8. Specific suggestions for the improvement of the Professional Task Analysis Activity in the future:

a. _____

b. _____

c. _____

APPENDIX E
TEAM MEETING EVALUATION FORM

TO BE COMPLETED BY TEAM MEMBERS ONLY

Team Meeting Evaluation

Team _____ (Please indicate your home state.)

DIRECTIONS: Read each statement carefully and circle one of the five numbers following each statement. Your comments are considered important.

1. The orientation to the activity clearly explained what was to be accomplished.

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

2. The guideline for the "action plan" development was easy to follow and understand.

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

3. The team meetings would have been more productive without workshop staff assistance.

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

4. The three "model program" presentations (Lampe, Clark, Brolin) provided valuable information for completing the action plans.

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

5. The printed and visual resource materials describing other programs were not very valuable for completing the action plans.

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

6. The list of professional tasks provided valuable information for developing the "action plan."

| | | | | |
|----------|-------|-----------|-------|----------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly | Agree | Undecided | Dis- | Strongly |
| Agree | | | Agree | Disagree |

Comment _____

7. Would changing the composition of your team have improved the development of your "action plan"?

| | | |
|-----|-----------|----|
| 1 | 2 | 3 |
| Yes | Uncertain | No |

If yes, please explain _____

8. A comprehensive and feasible "action plan":

Has not been initiated by my team 1

Has been initiated by my team 2

Has been developed by my team 3

If you believe that a comprehensive and feasible "action plan" was initiated or developed, please indicate the one factor which contributed most to its success. If you believe a comprehensive and feasible "action plan" was not initiated, please indicate the one factor which contributed most to the failure to get this under way.

APPENDIX F
OVERALL WORKSHOP EVALUATION FORM

OVERALL WORKSHOP EVALUATION FORM

DIRECTIONS: As part of our effort to evaluate the effectiveness of the workshop, we would appreciate your completing this questionnaire. It is important that every participant complete and return this form, so that the reactions of the total group will be reflected.

Your principal role during the workshop: (Circle one)

- Participating team member 1
- Presenter of program or session . 2
- Project staff 3
- Steering committee member 4
- Other 5
- Specify _____

1. The general objective of the Workshop was to assist each participating team to prepare a feasible "action plan" which could be used at its respective institution to refocus or expand its personnel preparation programs for vocational educators of special needs students. To what extent was this objective accomplished by the workshop program? (Circle one number)

| | | | | |
|-----------|------|----------|--------|------------|
| 1 | 2 | 3 | 4 | 5 |
| Extremely | Very | Somewhat | Very | Not at All |
| Well | Well | | Little | |

For the following statements, circle 1 number indicating how you feel about each statement. The "undecided" should be circled only when you have no opinion.

| | Strongly Agree | Agree | Un-decided | Dis-agree | Strongly Disagree |
|---|----------------|-------|------------|-----------|-------------------|
| a. The workshop held my interest. | 1 | 2 | 3 | 4 | 5 |
| b. The objectives of the workshop were <u>not</u> clear to me. | 1 | 2 | 3 | 4 | 5 |
| c. The objectives of the workshop were realistic for the time allotted. | 1 | 2 | 3 | 4 | 5 |
| d. There was not enough time for <u>informal</u> discussions during the workshop. | 1 | 2 | 3 | 4 | 5 |
| e. A similar future workshop should be longer in amount of time. | 1 | 2 | 3 | 4 | 5 |
| f. The facilities (meeting rooms, etc.) for the workshop were adequate. | 1 | 2 | 3 | 4 | 5 |

| | Strongly Agree | Agree | Un- decided | Dis- agree | Strongly Disagree |
|--|-------------------|-------|----------------|---------------|----------------------|
| g. The workshop was <u>not</u> well organized. | 1 | 2 | 3 | 4 | 5 |
| h. Not enough of the participants' time was spent in the evaluation of the workshop. | 1 | 2 | 3 | 4 | 5 |
| i. The scope (coverage) of the workshop was adequate. | 1 | 2 | 3 | 4 | 5 |

2. Workshop Sessions

DIRECTIONS: For the following workshop sessions, please circle the number of the three sessions that impressed you most highly. Next, circle the three with which you were least impressed.

| <u>Sessions</u> | Highly <u>Impressed</u> (circle three) | Least <u>Impressed</u> (circle three) |
|---|--|---|
| a. The vocational education perspective; Evans; Tuesday morning | 1 | 1 |
| b. The special education perspective; Clark; Tuesday morning | 2 | 2 |
| c. The local director's perspective; Marion; Tuesday morning | 3 | 3 |
| d. Presentation by Guemple; Texas Education Agency; Tuesday afternoon | 4 | 4 |
| e. "Model program" presentation; Lampe; Tuesday evening | 5 | 5 |
| f. "Model program" presentation; Clark, Sitlington, Wessitsh, Wimmer; Wednesday morning | 6 | 6 |
| g. "Model program" presentation; Brodin, McKay, West; Wednesday morning | 7 | 7 |
| h. The presentation on legislation; Pucinski; Wednesday afternoon | 8 | 8 |
| i. "Try Another Way" presentation; Gold; Thursday morning | 9 | 9 |

3. For those sessions with which you were highly impressed, please specify the reasons. Identify the sessions by using a letter (a-i) representing the session from question two above.

| <u>Session</u> | <u>Reason</u> |
|----------------|---------------|
| | |
| | |
| | |

4. For those sessions with which you were least impressed, please specify the reasons. Sessions a-i from question two.

| Session | Reason |
|---------|--------|
| | |
| | |
| | |

5. In your own words briefly indicate the one or two major personal benefits you have gained as a result of participating in the workshop.

a. _____
b. _____

6. Can you envision any benefits accruing to your institution as a result of the workshop?

| | |
|-----|----|
| 1 | 2 |
| Yes | No |

If yes, please describe _____

7. In your opinion, what were one or two major strengths of this workshop?
8. In your opinion, what were one or two major weaknesses of this workshop?
9. If you were to conduct a workshop with goals similar to this one, what would you do differently from what was done in this workshop?
10. If a workshop such as this is held again, will you recommend to your colleagues at other universities that they participate?
- | | | |
|-----|-----------|----|
| 1 | 2 | 3 |
| Yes | Uncertain | No |

THANK YOU FOR YOUR COOPERATION AND ASSISTANCE.

APPENDIX G
MINI - PROPOSAL FORM

MINI-PROPOSAL

for participation in the

NATIONAL WORKSHOP ON VOCATIONAL EDUCATION FOR SPECIAL NEEDS STUDENTS

January 13-15, 1976

University of Illinois at Urbana-Champaign

SUBMITTING INSTITUTION(S): _____

Proposal Initiator(s):

Name: _____
Title: _____
Address: _____

Telephone: _____

Descriptive Title of the Planned or Existing
Program for Preparing Special Needs Personnel:

Administrative Endorsement(s):
(Signatures of Dean(s) and/or Department Chairperson(s))

Title: _____
Date: _____

Title: _____
Date: _____

Title: _____
Date: _____

Title: _____
Date: _____

I. PROGRAM OBJECTIVES *(Please list the objectives of the existing or planned program for preparing personnel to work with special needs students in vocational education.)*

II. PROGRAM DESIGN *(Please describe the major components and unique features of the existing or planned program for preparing personnel to work with special needs students in vocational education.)*

III. WORKSHOP PARTICIPATION EXPECTATIONS *(Please describe how participation in the national workshop will enhance the existing or planned program for preparing personnel to work with special needs students in vocational education.)*

IV. PROSPECTIVE WORKSHOP TEAM *(In the space below, please list the names, titles, and departments of a maximum of four individuals who will attend the workshop if this proposal is selected. Please attach each individual's vita to this proposal application.)*

| | | |
|-------------|------------------------------|---------------------------|
| Name: | _____ | _____ |
| Title: | _____ | _____ |
| Department: | _____ | _____ |
| | <i>(Vocational Educator)</i> | <i>(Special Educator)</i> |
| | | |
| Name: | _____ | _____ |
| Title: | _____ | _____ |
| Department: | _____ | _____ |

V. SUPPORTIVE STATEMENT *(Please attach to this proposal at least one statement from a dean or department chairperson describing the administrative commitment given to preparing personnel to work with special needs students in vocational education. If the departments of vocational education and special education are in different schools/colleges within a university or across universities, support statements from the respective deans would be desirable.)*

APPENDIX H
MINI - PROPOSAL DEVELOPMENT GUIDE

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MINI-PROPOSAL DEVELOPMENT GUIDE

ELIGIBILITY

Any institution or consortium of institutions which is currently operating (or would like to develop) a cooperative personnel training program focused on preparing teachers, and/or coordinators to work effectively with secondary level special needs learners through some form of vocational programming, can submit a mini-proposal for workshop participation. "Personnel training program" should be interpreted broadly here to include any or all of the following: courses, seminars, inservice workshops, field experience internships, and degree programs or options.

APPLICATION FORM AND DEADLINE FOR SUBMISSION

The enclosed, three-page MINI-PROPOSAL form should be used in developing a proposal. Completed proposal forms should be mailed to one of the project co-directors identified below on or before November 7, 1975.

Dr. Rupert N. Evans
Professor of Vocational
and Technical Education
284 Education Building
University of Illinois
Urbana, Illinois 61801

(217) 333-4382

Dr. Gary M. Clark
Professor of Special Education
364 Haworth Hall
University of Kansas
Lawrence, Kansas 66044

(913) 864-4954

SELECTION PROCESS

Ten applicants will be selected for participation in the national workshop by November 21, 1975. To insure national representation, one institution or consortium of institutions from each of the 10 U.S. Office of Education national regions will be selected. In addition, it is planned that a variety of different types of personnel development programs will be selected. For instance, programs focusing on inservice or preservice personnel preparation, as well as combinations of both will be considered. Unique arrangements for offering personnel training within a single university, and across several institutions (consortium) will also be considered.

THE MINI-PROPOSAL FORM

The enclosed, three-page form (or a copy of it) must be used in submitting a proposal. Each of the five sections of the form must be completed. The cover page requests the following basic information: (1) name(s) of institution(s) submitting the proposal, (2) descriptive title of the existing or planned program for preparing special needs personnel, (3) name(s) of the individuals submitting the proposal, and (4) an administrative endorsement(s) of the mini-proposal.

The five sections of the mini-proposal form are designed to give the project staff a brief, but comprehensive overview of the existing or planned personnel training program. The sections which can adequately provide this overview are:

1. A statement of your personnel training program objectives.
2. A brief description of the major features of the program design.
3. A statement of what you might expect your program staff would gain by participating in the workshop.
4. An indication of who are the prospective workshop participants (maximum of four with representation from both vocational and special education).
5. A supportive statement from the dean and/or department heads of departments involved.

Each of these five sections are identified on the enclosed MINI-PROPOSAL form. The open-ended format of the MINI-PROPOSAL is designed to permit applying institutions flexibility in describing their program(s).

APPENDIX I
MINI-PROPOSAL DISSEMINATION LETTER

October 13, 1975

Dear Colleagues:

The University of Illinois and the University of Kansas are currently involved in preparing for a national teacher education workshop focusing on the preparation of personnel to work with individuals with special needs (specifically, the handicapped) in vocational programs. The need for trained personnel to better serve persons with special needs at the local level is widely recognized and several universities are currently concerned about meeting the increasing demand for professional personnel to teach and/or coordinate programs to serve this part of the nation's population. The express purpose of this workshop and the post-workshop follow-up activities is to assist ten (10) selected universities or consortia in planning or expanding personnel training programs in this field.

Presently, we are soliciting brief proposals from teacher training institutions nationally who might be interested in having teams of vocational and special education teacher educators participate in this workshop. The enclosed materials (Mini-Proposal Development Guide and mini-Proposal form) describe the information which interested institutions should submit. In order to expedite pre-workshop planning, the mini-proposals must be mailed (post-marked) to either of the project directors not later than November 7, 1975.

The enclosed Mini-Proposal Development Guide provides specific information relative to: institutional eligibility, the selection process, and the essential information to be included in the mini-proposal. The mini-proposal is essentially an application to attend the workshop.

The project will reimburse the travel, lodging, and meal expenses of selected participant teams to attend a 2 1/2 day workshop at the University of Illinois (Champaign-Urbana campus), January 13-15, 1976. While at the workshop, the participants will review several national and state projects which are involved in preparing personnel to work with special needs learners enrolled in vocational programs. In addition, approximately eight hours will be devoted to team work sessions in which the participants will be developing institutional action plans. The action plans will outline activities which the team plans to undertake to initiate or expand needed personnel training programs addressing the needs of handicapped persons enrolled in vocational programs. The project staff anticipates being able to make available approximately \$400 per institution or consortium to assist each team in implementing its "action plan."

Those institutions whose proposals are selected will be expected to: (1) send an enthusiastic team of vocational and special teacher educators (possibly including department chairpersons or deans), (2) encourage their representatives to participate fully and actively in the entire 2 1/2 days of workshop activities, and (3) support the planning efforts of the attending team in a reasonable manner.

In addition to the institutional team members selected, state office of education personnel will be invited to attend the workshop. After the ten institutions have been selected, the EPDA coordinator in each of the respective state offices of vocational education will be asked to nominate a state office representative to attend the workshop, and assist the university team in development of its action plan.

This project is designed specifically to expand and improve the nation's efforts in the training of teachers and other personnel to more adequately meet the vocational needs of special learners. Our basic notion is that this can be done most effectively through cooperative endeavors between the fields of vocational and special education. We are looking forward with great anticipation to a unique and extremely important national teacher education workshop. We invite you to join us in this exciting project, and are looking forward to receiving your mini-proposal.

Sincerely,

Rupert N. Evans
Rupert N. Evans
Project Director

Gary M. Clark
Gary M. Clark
Project Director

RNE/GMC:pjg

Enclosures

APPENDIX J
PLANNING AND EVALUATION OPINIONNAIRE

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FOR OFFICE USE ONLY

Respondent Group

- ☐ Steering Committee Member
☐ Workshop Participant
☐ Project Staff
☐ Presenter
☐ Funding Agency Personnel
☐ Nonparticipating Teacher Educator
(classification of respondents as audiences to the evaluation report)

O P I N I O N N A I R E

Directions: Several potential evaluation concerns have been specified in four different areas: input, process, outcome, and impact. In each area, please check one or two of the concerns you feel should be the major focus of the evaluation. Use a double check (✓✓) to indicate the most important concern in each area.

Feel free to reword the evaluation concerns, add to the list of concerns, or provide any other input or suggestions which you feel would be relevant to the evaluation of this workshop.

Workshop Input Concerns

- ☐ Budgetary input/cost effectiveness
☐ Funding agency input
☐ Pre-workshop research bibliography
☐ Steering/advisory committee input
☐ Other _____
☐ Other _____
☐ Other _____

Comments:

Workshop Process Concerns

- ☐ Process for selection of participants
☐ Project staff competency
☐ Reimbursement/payment processes for participants
☐ Resource materials provided to participants describing other teacher education programs or projects

_____ Small group workshop activities
(Please check all appropriate items)

_____ Informal dialogue among participants

_____ Team meetings to develop "action" plans

_____ Competency synthesis activity -- to develop a list of
competencies needed by vocational educators of special
needs students

_____ Steering/Advisory Committee involvement during the workshop

_____ Workshop presentations and presenters

_____ Workshop scheduling and organization

_____ Other _____

_____ Other _____

_____ Other _____

Comments:

Workshop Outcome Concerns

_____ Follow-up process/services provided

_____ Action plans for development/expansion of personnel preparation programs

_____ Attitudinal change

_____ Increased awareness and knowledge of professional issues and concerns
(e.g., mainstreaming)

_____ Opportunity for professional communications/involvement

_____ Outcomes related to the development of mini-proposals for workshop
participation

_____ Synthesized list of competencies needed by vocational and special
education personnel (to be developed by workshop participants)

_____ Other _____

_____ Other _____

_____ Other _____

Comments:

Workshop Impact Concerns

- ☐ Impact on funding agency (state and federal) personnel
- ☐ Impact on institutions submitting mini-proposals for participation, but which were not selected
- ☐ Impact on participants
- ☐ Impact on participant's institutional programs
- ☐ Impact on project staff
- ☐ Impact on steering/advisory committee
- ☐ Impact on presenters
- ☐ Impact on _____
- ☐ Impact on _____

Please specify the nature of the impacts for those items checked above.

(Please review all four areas to be sure only one or two concerns are checked in each area.)

APPENDIX K

PREPARING VOCATIONAL AND SPECIAL EDUCATION PERSONNEL
TO WORK WITH SPECIAL NEEDS STUDENTS:
A STATE OF THE ART

Gary M. Clark

Rupert N. Evans

The state of the art in preparing vocational and special education personnel to work with special needs students is inextricably interwoven with the states of the art in vocational and technical education, career education, and teacher education, and in the education and training of the handicapped. This statement will examine the field by relating the roles of teacher educators who are interested in preparing personnel to work with special needs students to the various education influences to which they must respond.

The Influence of Professional Dissatisfaction

The first of these influences is current professional dissatisfaction with the nature and rate of progress made since 1963 and especially since 1968 in vocational provisions for special needs students. Leading teacher educators from vocational education and special education have become increasingly concerned about the lack of response to the 1963 Vocational Education Act by state departments of education, local school districts, area vocational schools, community colleges, and colleges and universities.

Unfortunately, however, until the past year or two, the extent of this concern by most teacher educators has not been great enough to muster more than a few isolated efforts to do much about the problems being identified. Part of this failure to act was due to a lack of a data base on programs and other funded activities, but when data started to emerge, early impressions began to be confirmed. These data include such items as: (a) handicapped youth are still being under-served, (b) state-wide programs are rare, (c) special projects providing for isolated programs are the most common programming response, and (d) there are shortages of teachers qualified to work with the handicapped. The general state of the art, given these data, appears to be in its infancy, and it would appear that professional dissatisfaction has not as yet been sufficient to bring about needed change.

The Influence of Leadership Groups

A second educational influence to which teacher educators in vocational education and special education must respond is that of educational leadership groups. These include the Congress and state legislatures, the U.S. Office of Education, state departments of education, and professional organizations. The state of the art for leadership groups in advocating personnel preparation programs for those working with special needs students is, again, at a rather embryonic or early developmental level.

Congress and State Legislatures. Congressional dissatisfaction has continued to grow as it has become clear that schools have responded only haltingly to the express Congressional marching orders contained in the 1968 Vocational Education Act Amendments. These amendments require that

*The terms "special needs students" and "handicapped students" will be used interchangeably since special needs implies a handicap in school, whether due to disability, disadvantage, or dysfunctional school placement.

25% of Federal vocational education funds be spent on special needs students (15% for disadvantaged plus 10% for handicapped students). If schools do not respond to express economic incentives, something must be wrong.

Legislative dissatisfaction can also be noted in the trend of state level mandates that special education programs and services be provided by the public schools. However, in formulating mandatory special education legislation, few states have as yet specifically mandated the provision of vocational education for the secondary, post-secondary, or adult handicapped population. Most of these laws include requirements only for prevocational or work-study experiences which have traditionally been provided by special educators. This has tended to negate any specific responsibilities for vocational educators.

U.S. Office of Education. Leadership groups at the Federal level are caught in complex socio-political pressures which siphon off their energies and efforts in an attempt to address a myriad of priorities. The priority of vocational programming for special needs students has suffered from the political factors operating in commitment to and involvement of various Federal leadership groups in their own priorities. The Bureau of Occupational and Adult Education cites programs for special needs students as important. The Bureau of Education for the Handicapped cites vocational programming for the handicapped as one of its top funding priorities. The Office of Career Education cites career education programs for the handicapped as a priority for field initiated studies. Under the Education Professions Personnel Development Act (the funding source for this national workshop) the Vocational Education Personnel Development Branch has as one priority the development of personnel preparation programs for special needs personnel. Each of these leadership groups within the national office is striving for common goals, but largely without a master plan from the U.S. Office of Education and often without significant interaction or communication among themselves.

State Departments of Education. State departments of education have replicated the federal pattern in most instances. Iowa is one notable example, however, among a few of the states, that has defused the political tension and relieved the duplication of effort. This was done by placing the program for special needs directly under the state commissioner of education and staffing it with vocational and special educators. It still remains to be determined whether separation of special needs personnel from the state vocational education hierarchy will lead to less emphasis by vocational education decision makers on programs which emphasize mainstreaming. No examples are known of state offices which have placed all special education personnel under the aegis of the state department of vocational education.

In one area where states have almost complete leadership control, certification of educational personnel, there has been a tomb-like silence from 1958 until recently when a few states, e.g., Nebraska and New Jersey, began to adopt certification standards which require certain competencies for personnel who provide vocational programming for special needs learners.

Special educators at the secondary level have long been free to teach in prevocational and work-study programs without any certification requirements other than basic special education requirements. Similarly, vocational educators have been free to teach special needs students of any type without specific preparation. Obviously, a real leadership void exists in certification standards.

Professional Organizations. Professional organizations have been only moderately responsive to the need for leadership. The principal activities have been the establishment of a Special Needs Section in the American Vocational Association and planning for a parallel group in the Council for Exceptional Children. In 1973 these two organizations cooperated in the sponsorship of a national conference on career education for exceptional students, but little continuing leadership commitment to professional personnel development has been apparent. Cooperative leadership is critically needed within and between major professional organizations to foster personnel preparation programs at the national and state level.

Teacher Education. Teacher educators in vocational and special education have not found a significant amount of leadership from within their own ranks. Colleges and universities have been extremely slow since 1968 in developing personnel preparation programs to meet the demand for special needs programs. There has been a degree of circularity in the problem as schools of education respond primarily to state and local manpower demands which reflect shortages in existing programs. The schools and state departments, on the other hand, are cautious about initiating programs without qualified personnel. Joint programs between vocational education and special education have been rare. The past two or three years has seen a number of departmental programs develop with vocational educators training their own students to work with the handicapped, and special educators training their own to provide prevocational, sheltered workshops and part-time cooperative shelter programs designed to serve similar populations. Truly cooperative programs involving special educators and vocational educators on an equal footing have been rare. Because we are concerned principally with teacher education involving both groups, this topic is expanded later in this paper.

The Influence of Current Issues and Trends

A third educational influence affecting the state of the art in preparing special needs personnel in vocational and special education is the impact of current educational issues and trends. Some major issues and trends in vocational and special education which interact with the educational influences described above include career education, "mainstreaming," and competency-based teacher education.

Career Education has been both a boon and a bane to vocational and technical education. It has brought increased professional status, wider legitimacy and acceptance in academia, and greater visibility within the field of education in the eyes of the general public. It has also resulted in some identity problems and has incorporated some new values and objectives which extend well beyond traditional vocational goals. Further, some vocational educators feel that it has diluted the political and economic support base vocational education has had through the years in a period

when funding sources are decreasing in both number and amount of available support. Teacher educators in vocational and technical education have had to determine their roles in the current career education movement and place them somewhere among their priorities. The addition of any new priority consideration-- especially one as economically, politically, and professionally potent as career education--cannot help but affect special needs programming as a competing priority. Career education appears to have had little effect on special education at the secondary level.

Mainstreaming has had, and will continue to have, major impact on vocational and special education. Related to the mainstreaming concept are current issues such as "least restrictive alternative," "normalization," and deinstitutionalization. The implications of these issues and trends are already apparent in court decisions and state legislative mandates for local schools. The discerning teacher educator in vocational and special education can see the impact of these decisions on personnel preparation programs: (a) a shift downward in the lower range of entering level competencies of students in the schools, (b) a wider range of physical, sensory, and mental performance levels in students placed in regular education programs, and (c) the need for new professional roles not heretofore included in personnel preparation programs. The state of the art in meeting these needs in teacher education is relatively primitive, and is the primary motivation for this national workshop.

Competency-based teacher education has had perhaps a greater emphasis in vocational and special teacher education than in any other educational disciplines. The status of the field, in reacting to this emphasis, is still at the pioneer level. Only a few isolated efforts have been made to identify systematically those competencies needed by teachers of handicapped youth and then to relate those competencies to some model for preparing personnel specifically for those roles. Much work remains to reach a level of program development in teacher education that is truly competency-based, but which does not eliminate those affective and problem-solving skills that are so crucial in personnel preparation.

Specific Influences Affecting Teacher Education

The influences of professional dissatisfaction, of leadership groups and of current issues and trends operate against a background of specific influences within teacher education.

Structure and Attitude of Separate Mission. In many universities, vocational teacher education is provided by a number of weakly federated departments, often in different colleges. Even when these groups are combined in the same department they tend to retain different missions related to the age groups they should serve, the goals of their program, and the ways in which the program should be evaluated. One group, for example, may believe strongly that a good secondary school program places a high proportion of its graduates in the occupation for which they were prepared. Another group may feel strongly that this is unimportant.

Special education is in another department, perhaps in another college, or even in a different university. Often it is less concerned with meeting the needs of employers than are most parts of vocational education.

These and other differences in structure and in mission inevitably lead to difficulties of communication.

Different Age Groups Served. Special education has tended to emphasize service to youth in elementary schools and in early childhood education. Vocational education has emphasized service to adolescents and young adults. Both groups give little more than lip-service to serving adults. Slow learners often need early pre-vocational training from vocational educators who recognize the needs of pre-adolescents. Adolescents and adults in vocational programs need help from special educators who don't treat them as children.

Teacher Shortage. Teacher education programs in both vocational and special education usually have been able to place all the teachers they prepare. This minimizes pressure to establish new programs, but it also leads local education agencies to employ unqualified people to teach.

State Teacher Certification/Endorsement Barriers. There are a number of indications that vocational and special educators who are qualified in one, but not the other of these two fields, are teaching in situations where both types of competencies are needed. It seems unlikely that many teachers will spend the time required to achieve full qualifications in each field. But most certification/endorsement structures seem to assume that it is better to have a teacher who is completely qualified in one field being taught and completely unqualified in another than it is to have certification based on achievement of most qualifications for both fields.

Teacher Education Program Approval Barriers. In addition to the preceding barriers, it is becoming more difficult to secure approval of new teacher education programs. Much data, paperwork and time are needed to secure approval at each of the increasing number of levels through which proposals for new programs must move. Some situations require the abandonment of an existing program before a new one can be approved.

Lack of Data on Which to Base Personnel Development Programs. In spite of the fact that data can speed the program approval process, we have virtually no needs assessment data, and little follow-up data on programs at either the LEA or teacher education level.

Barriers to Joint Appointments. A logical way to undertake program development and to facilitate communication is to institute joint appointments between the special and vocational teacher education departments. Such appointments are rare, however, and one reason is that there is a general belief that assistant and associate professors who hold joint appointments will have difficulty in securing promotion. An even more compelling reason would seem to be the extreme shortage of young professors who are acceptable to both departments.

The Increasing Diversity of Special Needs Population in Vocational Education. At one time, most vocational educators accepted the dictum of the Smith Hughes Act that vocational education should serve only those who

could profit from it, and they interpreted this phrase to mean that special needs learners should be excluded whenever "more able" students could be found. Nevertheless, vocational education always has served a high proportion of the students who did not do well in the college preparatory program. Now there is gradual acceptance that vocational programs must also educate the severely handicapped, bilingual students, corrections populations, migrants, and the adult handicapped. As career education programs are installed, the gifted increasingly are enrolling. This range of students obviously requires an increased range of teacher competencies and revised teacher education programs.

The Changing Legislative Picture. Legislative bodies seem remarkably adept at mirroring the views of society. If so, then, obviously these views have been changing in ways which affect special education and vocational education. Increasingly, we have state legislation which mandates special education for all persons from early childhood through young adulthood. Congress seems more and more determined to insure that vocational education will attend thoroughly to the needs of neglected learners. Cities and states are given large sums through the Comprehensive Employment and Training Act for the training and re-training of unemployed and underemployed adults, almost all of whom have special needs. Not only the Labor Department, but also most other Federal agencies are involved in similar programs.

No one can predict what the next legislative actions will be, but it is easy to predict that actions will come and that they will affect vocational and special education. Already there is an enormous need for inservice education of teachers and support personnel. With continued changes there is no way that pre-service teacher education programs will be sufficient to meet the need.

Summary

The state of the art, then, in personnel preparation for those who will plan and implement vocational programs for special needs or handicapped students is in an early developmental period. It suggests the existence of a growing number of advocates from both vocational and special education who realize the enormity of the task and the urgency of cooperative planning. It suggests that the issues and trends of the times will affect the rate at which progress will be made, but that the die has been cast through court decisions and legislation, leaving no doubt about the legal consequences for those who do not comply. It suggests that there is a leadership void at all levels and that isolated, unilateral programming, which meets only a small part of the need, will continue unless strong leadership emerges.

Given increased cooperative efforts of vocational and special teacher educators and the strength of the existing and prospective legal base, the current state of the art may be transitional and the outlook for future improvements to the art may be bright. It is hoped that this national workshop may be a turning point in that development.

APPENDIX L
TEAM FOLLOW-UP QUESTIONNAIRE

TEAM FOLLOW-UP QUESTIONNAIRE

National Teacher Education Workshop on Vocational
Education for Special Needs Students

Bureau of Educational Research
University of Illinois
Champaign-Urbana, Illinois

INSTITUTION/CONSORTIUM: _____

Team Members Signatures

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

In order to determine the impact of the national workshop upon university personnel preparation programs concerning vocational programming for special needs students, it is important for your entire team to respond to this questionnaire as a group.

For each of the items listed on the following pages, please check (✓) one that best describes the action taken at your university(ies) in relation to Vocational Programming for Special Needs Students. Respond with comments as you feel necessary.

PART I

Section A

Course/Program Development Concerning Vocational Programming for Special Needs Students

*In Existence
Prior to Workshop*
*In Planning
Prior to Workshop*
*In Planning Since
Workshop*
*Implemented/
Completed Since
Workshop*
*No Action
Taken*

Comment as necessary

1. Identification of teacher competencies for vocational programming of special needs students

2. Advisory/steering committee for course development

Proposal for introductory pre-service or inservice course

b. Presentation of proposal for introductory course to appropriate curriculum approving committee

4a. Proposal for advanced (e.g. methods) course for preservice or inservice

b. Presentation of proposal for advanced course to appropriate curriculum approving committees

5. Procurement of resource materials for teaching courses/workshop

6. Evaluation/revision of present courses or programs

7. Advisory/steering committee for degree program

8a. Development of proposal for undergraduate degree program

b. Submission of proposal for undergraduate degree program for approval

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| | In Existence Prior to Workshop | In Planning Prior to Workshop | In Planning Since Workshop Implemented/ Completed Since Workshop | No Action Taken | Comment as necessary |
|--|-----------------------------------|----------------------------------|--|-----------------|----------------------|
| 9a. Development of Proposal for Graduate degree program | | | | | |
| b. Submission of proposal for graduate degree program for approval | | | | | |

Section B

Staff to Implement Course(s)
Program(s) (related to Vocational
Programming for Special Needs
Students)

| | | | | | |
|--|--|--|--|--|--|
| 1. Present faculty competencies evaluated? | | | | | |
| 2. Job description of position(s) desired | | | | | |
| 3. Search committee(s) for position(s) | | | | | |

Section C

Exploration of Funding Sources for
Vocational Programming for Special
Needs Students

| | | | | | |
|-----------------------------|--|--|--|--|--|
| 1. Local/University Sources | | | | | |
| For: Inservice workshops | | | | | |
| Research | | | | | |
| Curriculum development | | | | | |
| Planning committee meetings | | | | | |

| | <i>In Existence Prior to Workshop</i> | <i>In Planning Prior to Work- shop</i> | <i>In Planning Since Workshop</i> | <i>Implemented/ Completed Since Workshop</i> | <i>No Action Taken</i> |
|-----------------------------|---|--|---------------------------------------|--|----------------------------|
| 2. State Sources | | | | | |
| For: Inservice workshops | | | | | |
| Research | | | | | |
| Curriculum development | | | | | |
| Planning committee meetings | | | | | |
| 3. Federal Sources | | | | | |
| For: Inservice workshops | | | | | |
| Research | | | | | |
| Curriculum development | | | | | |
| Planning committee meetings | | | | | |

Comment as necessary

Section D

Communication/Cooperation Concerning
Vocational Programming for Special
Needs Students.

1. Joint departmental/university meetings
(sp ed/voc ed faculty invited)

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

How many meetings have been held:

before workshop_____

since workshop_____

| | In Existence Prior to Workshop | In Planning Prior to Workshop | In Planning Since Workshop | Implemented/ Completed Since Workshop | No Action Taken | Comment as necessary |
|--|-----------------------------------|----------------------------------|-------------------------------|---|-----------------|----------------------|
| 2. Joint departmental/university committees (sp ed, voc ed) Please List Committees: _____ _____ _____ | | | | | | |
| 3. Other communication/cooperative activities Please List Activities: _____ _____ _____ | | | | | | |
| Section E | | | | | | |
| Workshop Concerning Vocational Programming for Special Needs Students | | | | | | |
| 1. Proposal written? | | | | | | |
| 2. Proposal submitted | | | | | | |
| 3. Steering committee for workshop development | | | | | | |
| 4. Workshop program developed | | | | | | |
| 5. Workshop information dissemination | | | | | | |
| 6. Workshop conducted | | | | | | |
| Workshop evaluated | | | | | | |

PART II

- I. Please list and describe the activities and accomplishments of your team in relation to the short term objectives as described in your Action Plan.

In addition, please briefly describe any problems which have tended to impede accomplishments of your short term objectives and also when the problem occurred (e.g. prior to workshop, continuing, etc.)

2. Please list and describe the activities and accomplishments of your team in relation to the long term objectives as described in your Action Plan.

In addition, please briefly describe any problems which have tended to impede accomplishment of your long term objectives and also when the problem occurred. (e.g. prior to workshop, continuing, etc.).

3. Please briefly describe any other impact (not previously mentioned in this questionnaire) upon your institution(s) which has occurred as a result of participation in the national workshop.

4. After trying to implement your Action Plan, would your team now have any conclusions about the feasibility of your plan, or would you now make any revisions. (If so, please describe.)

APPENDIX M
PARTICIPANT FOLLOW-UP QUESTIONNAIRE

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(Check your area of specialization) Special Education _____
 Vocational Education _____
 Counselor Education _____

Employed by: State Department _____
 University _____
 U.S.O.E. _____

- A. In order to determine impact of the workshop upon participants, it is important for you to respond concerning any new/different activities in which you have been engaged since attending the workshop. Please do not indicate your name. All information will be reported across general categories and not as individuals.

DIRECTIONS: For each item (a-q), circle 1 for Yes or 2 for No, indicating whether or not you have been, or are presently involved in this activity. For each activity in which you are participating, please indicate on the scale at the right the extent to which you feel the activity was due to your involvement in the national workshop.

1. New Activity Initiated for: Vocational Programming for Special Needs Students If yes, to what extent is your new involvement due to participating in the workshop.

| | <u>YES</u> | <u>NO</u> | <u>Completely</u> | <u>Somewhat</u> | <u>Not at all</u> |
|--|------------|-----------|-------------------|-----------------|-------------------|
| a. Assist in organizing program advisory or steering committee | 1 | 2 | 1 | 2 | 3 |
| b. Course planning/development | 1 | 2 | 1 | 2 | 3 |
| c. Degree program planning/development | 1 | 2 | 1 | 2 | 3 |
| d. Exploration of funding sources | 1 | 2 | 1 | 2 | 3 |
| e. Proposal writing for funding | 1 | 2 | 1 | 2 | 3 |
| f. Planning of inservice workshop | 1 | 2 | 1 | 2 | 3 |
| g. Presentation at inservice workshop | 1 | 2 | 1 | 2 | 3 |
| h. Professional writing related to vocational programming for special needs students | 1 | 2 | 1 | 2 | 3 |
| i. Increased reading of professional literature concerning vocational programming for special needs students | 1 | 2 | 1 | 2 | 3 |
| j. Increased communication/cooperation with colleagues in other discipline | 1 | 2 | 1 | 2 | 3 |
| k. Pertinent teacher education committee membership (e.g., curriculum committee) | 1 | 2 | 1 | 2 | 3 |
| l. Increased communication with state or federal personnel | 1 | 2 | 1 | 2 | 3 |
| m. Research involving vocational programming for special needs students | 1 | 2 | 1 | 2 | 3 |
| n. Evaluation of existing teacher training program | 1 | 2 | 1 | 2 | 3 |

| | <u>YES</u> | <u>NO</u> | <u>Completely</u> | <u>Somewhat</u> | <u>Not at all</u> |
|---|------------|-----------|-------------------|-----------------|-------------------|
| c. Membership in professional organization(s) concerned with vocational programming for special needs students (NAVESNP, CEC, etc.) | 1 | 2 | 1 | 2 | 3 |
| p. Other _____ | 1 | 2 | 1 | 2 | 3 |
| q. Other _____ | 1 | 2 | 1 | 2 | 3 |

2. Please briefly describe any other impact on your own feelings, attitudes, or behavior that is a result of your participation in the national workshop.

Positive impact(s):

Negative impact(s):

3. In addition to the activities mentioned previously, please describe any future activities in which you may be engaged as a result of your participation in the workshop.

4. To what extent have you as an individual participated in team activities since the workshop? (Please circle one number indicating your response concerning each pair of adjectives.)

| | <u>Extremely</u> | <u>Very</u> | <u>Some what</u> | <u>Neutral</u> | <u>Some what</u> | <u>Very</u> | <u>Extremely</u> | |
|--------------|------------------|-------------|------------------|----------------|------------------|-------------|------------------|------------------|
| Active | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Passive |
| Extensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Limited |
| Contributing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Non-contributing |

Comment: If your participation was restricted, please indicate the reasons. (There is no means of identification, so please be honest).

SPECIFICALLY REGARDING THE NATIONAL WORKSHOP YOU ATTENDED:

5. Your overall reaction to the presentations at the workshop.

| | <u>Extremely</u> | <u>Very</u> | <u>Some what</u> | <u>Neutral</u> | <u>Some what</u> | <u>Very</u> | <u>Extremely</u> | |
|------------|------------------|-------------|------------------|----------------|------------------|-------------|------------------|--------------|
| Profitable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unprofitable |
| Boring | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Interesting |
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |

Comment: (as necessary)

6. Your reaction to the Professional Task Analysis Activity.

| | <u>Extremely</u> | <u>Very</u> | <u>Some what</u> | <u>Neutral</u> | <u>Some what</u> | <u>Very</u> | <u>Extremely</u> | |
|-------------|------------------|-------------|----------------------|----------------|----------------------|-------------|------------------|--------------|
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |
| Ineffective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Effective |
| Profitable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unprofitable |

Comment:

7. Your reaction to the team meeting sessions.

| | <u>Extremely</u> | <u>Very</u> | <u>Some what</u> | <u>Neutral</u> | <u>Some what</u> | <u>Very</u> | <u>Extremely</u> | |
|-------------|------------------|-------------|----------------------|----------------|----------------------|-------------|------------------|--------------|
| Profitable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unprofitable |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Interesting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Boring |

Comment:

B. In reflecting about the workshop:

1. The general objective of the workshop was to assist each participating team to prepare a feasible "action plan" which could be used at its respective institution to refocus or expand its personnel preparation programs for educators of special needs students in vocational programming. To what extent was this objective accomplished by the workshop program? (Circle one number).

| <u>Extremely well</u> | <u>Very well</u> | <u>Somewhat</u> | <u>Very Little</u> | <u>Not at all</u> |
|---------------------------|----------------------|-----------------|------------------------|-------------------|
| 1 | 2 | 3 | 4 | 5 |

2. Please briefly indicate the two major personal benefits you gained as a result of participating in the workshop.

- C. In order to improve future inservice education for teacher educators, would you please indicate your opinions about the following concerns. For items 1-7, please think in general terms, not in reference to the national workshop you attended.

REGARDING INSERVICE EDUCATION FOR TEACHER EDUCATORS IN GENERAL:

1. The writing of mini-proposals as a basis for selection to participate in inservice education for teacher educators.

| | <u>Extremely</u> | <u>Very</u> | <u>Some what</u> | <u>Neutral</u> | <u>Some what</u> | <u>Very</u> | <u>Extremely</u> | |
|-------------|------------------|-------------|----------------------|----------------|----------------------|-------------|------------------|------------|
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |
| Ineffective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Effective |
| Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Meaningless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningful |

Comment:

2. The "team approach" to participation in inservice activities.

| | Extremely | Very | Some | Neutral | Some | Very | Extremely | |
|----------------|-----------|------|------|---------|------|------|-----------|--------------|
| | | | What | | What | | | |
| Profitable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unprofitable |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Nonthreatening | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Threatening |
| Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |

Comment:

3. Follow-up activities and follow-up services (e.g. consulting) for effective inservice education.

| | Extremely | Very | Some | Neutral | Some | Very | Extremely | |
|--------------|-----------|------|------|---------|------|------|-----------|-------------|
| | | | What | | What | | | |
| Essential | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unessential |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Unprofitable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Profitable |

Comment:

4. The use of a pre-workshop document for orientation to the inservice activities.

| | Extremely | Very | Some | Neutral | Some | Very | Extremely | |
|-------------|-----------|------|------|---------|------|------|-----------|-------------|
| | | | What | | What | | | |
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |
| Undesirable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Desirable |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |

Comment:

5. A display of current materials concerning the subject matter disciplines involved.

| | Extremely | Very | Some | Neutral | Some | Very | Extremely | |
|-------------|-----------|------|------|---------|------|------|-----------|-------------|
| | | | What | | What | | | |
| Undesirable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Desirable |
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |

Comment:

6. The use of a team developed plan for improvement.

| | Extremely | Very | Some | Neutral | Some | Very | Extremely | |
|------------|-----------|------|------|---------|------|------|-----------|-------------|
| | | | What | | What | | | |
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Essential | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unessential |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
| Purposeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Aimless |

Comment:

7. The use of an instrument to help plan workshop activities, (e.g. the evaluation concerns opinionnaire sent out to participants prior to the workshop).

| | <u>Extremely</u> | <u>Very</u> | <u>Some</u> <u>what</u> | <u>Neutral</u> | <u>Some</u> <u>what</u> | <u>Very</u> | <u>Extremely</u> | |
|-----------|------------------|-------------|----------------------------|----------------|----------------------------|-------------|------------------|-------------|
| Effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ineffective |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
| Essential | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unessential |
| Aimless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Purposeful |

Comment:

THANK YOU FOR YOUR ASSISTANCE

APPENDIX N
NON-PARTICIPANT FOLLOW-UP QUESTIONNAIRE

A. Please briefly describe any impact upon your faculty or your institution which is a result of your submission of a mini-proposal for participation in the national workshop for teacher educators involved with vocational education for special needs students. It was held in January, 1976 at the University of Illinois. Please use back side or additional sheet, if necessary.

B. Assuming the development of the mini-proposal did have some impact upon your faculty or institution, how do you view the impacts, changes, or developments, that occurred?

| | | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|--------------|
| 1. Profitable | _____ | _____ | _____ | _____ | _____ | _____ | Unprofitable |
| 2. Effective | _____ | _____ | _____ | _____ | _____ | _____ | Ineffective |
| 3. Worthless | _____ | _____ | _____ | _____ | _____ | _____ | Valuable |
| 4. Desirable | _____ | _____ | _____ | _____ | _____ | _____ | Undesirable |

Comment:

C. A copy of "Issues in the Preparation of Personnel for the Vocational Programming of Special Needs Students: Synopses of Selected Materials" was sent to you.

Did you receive this document: Yes _____ No _____

Please briefly describe your general reactions to this document.

What effect, if any, has it had on you, your staff, or your program?

APPENDIX O
NATIONAL WORKSHOP STEERING COMMITTEE

| | |
|-----------------------|---|
| Mr. J.C. Barrett | Special Programs Consultant Division of Adult, Vocational and Technical Education Illinois Office of Education |
| Dr. Bruno D'Alonzo | Special Education Northern Illinois University |
| Dr. William Halloran | 10-to-States Branch Bureau of Education for the Handicapped U.S.O.E. |
| Dr. Charles Hempstead | E.P.D.A. Coordinator Illinois Office of Education |
| Dr. Stephen Lilly | Chairperson, Special Education University of Illinois |
| Dr. Ronald Lutz | Industrial Education and Technology Central Michigan University |
| Dr. Lloyd Phipps | Chairperson, Vocational-Technical Education University of Illinois |
| Dr. Herman Saettler | Bureau of Education for the Handicapped U.S.O.E. |
| Ms. Frances Saunders | Bureau of Occupational and Adult Education U.S.O.E. |
| Mr. Elmer Schick | Region V Department of Health, Education, and Welfare |
| Dr. Stuart Schwartz | Special Education University of Florida |
| Ms. Martel Tapman | Career Education Branch Department of Health, Education, and Welfare |

Assignment 6

Electrical Control Systems

Form 1 (JANUARY 1964) (Rev. 10-1-63)

-
1. Refer to textbook figure 7-61. What are the principles of operation of the components in water electric heating system?
-
2. Answer items 6-1 through 6-4, refer to textbook figure 7-61.
- 6-1. The operating immersion control in the burner circuit of a forced hot-water heating system energizes which of the following components?
1. Circulator motor
 2. Thermostat
 3. Stack switch
 4. Transformer
- 6-2. After the thermostat is satisfied, it turns off the relay which stops the
1. circulator motor only
 2. burner motor only
 3. circulator motor and burner motor
- 6-3. During the wash cycle of an automatic washer, the agitator is controlled by a
1. two-speed motor running on low speed
 2. two-speed motor running on high speed
 3. clutch
 4. two-speed transmission operating in second gear
- 6-4. Temperature of the air that passes through the clothes in an electric dryer is controlled by the
1. timer
 2. safety thermostat
 3. high- and low-limit thermostats
 4. electric heater
- 6-5. Refer to textbook figure 7-65. What is the position of the double-throw thermostat when the top part of the tank has reached its preset temperature?
1. Top contact open, bottom closed
 2. Top contact closed, bottom open
 3. Top contact open, bottom open
 4. Top contact closed, bottom closed
- 6-6. The most reliable method of testing switches in an electric range is to measure their
1. resistance
 2. voltage
 3. current
 4. temperature
- 6-7. Of the following, which causes the starting relay of a hermetic compressor to close its contacts on start?
1. High starting current
 2. High running current
 3. Out-of-phase, magnetic field
 4. Motor speed increase
- 6-8. The electric timer clock of textbook figure 7-73 is preset to defrost the refrigerator by energizing the heaters in the freezer section.

Learning Objective: Using a trouble-shooting chart, identify the causes of trouble in window air-conditioners.

In answering items 6-9 through 6-12, select from column B the trouble which is caused by the fault in column A. Refer to textbook figure 7-71.

| A. Faults | B. Troubles |
|-------------------------------------|--|
| 6-9. Defective unit starting switch | 1. Unit blows fuses |
| 6-10. Faulty running capacitor | 2. Unit will not run |
| 6-11. Incorrect fuse | 3. Fan runs, compressor will not operate |
| 6-12. Inoperative thermostat | |

Learning Objective: Indicate principles and techniques of installing an interior wiring system.

- 6-13. All interior wiring systems that CE's install or maintain must conform to the specifications issued by NAVFAC.
- 6-14. The type and size of wiring most frequently used for interior jobs is
1. solid No. 14 AWG
 2. stranded No. 12 AWG
 3. stranded No. 14 AWG
 4. solid No. 12 AWG
- 6-15. If ten No. 12 AWG conductors are placed in the same conduit, their current-carrying capacity equals
1. 12 amp
 2. 14 amp
 3. 16 amp
 4. 20 amp
- 6-16. In running a length of 7/8-inch-diameter Romex cable in a quonset building, it is necessary to make some 90° bends. What is the minimum radius of bend for this cable?
1. 1.3 in.
 2. 4.5 in.
 3. 6.0 in.
 4. 7.5 in.

- 6-17. A wiring plan calls for installing a cable by direct burial in a location where the cable will be exposed to wet and dry conditions and temperatures in excess of 100°F. The rubber insulation used should be that specified by the NEC as type
1. R
 2. RHW
 3. RH
 4. RU

In items 6-18 through 6-20, select from column B the location in which the type of wire insulation in column A is used.

| A. Types of Insulation | B. Locations |
|------------------------|--------------------------------------|
| 6-18. TA | 1. Switchboard |
| 6-19. TW | 2. Underground installation |
| 6-20. Asbestos | 3. Transformer lead in dry area |
| | 4. Dry: above 200°F, 220-volt system |

- 6-21. A conduit threading die is used to

1. thread only conduit over 1 inch in diameter
2. make a tapered thread on conduit
3. thread and cut conduit in one operation

To answer items 6-22 and 6-23, assume you are making a 90-degree bend in a length of 1/2-inch conduit at a distance of 36 inches from one end.

- 6-22. To make the first bend of about 25 degrees, you place the conduit hickey so that its back edge is how far from the end of the conduit?

1. 28 in.
2. 30 in.
3. 32 in.
4. 34 in.

6-23. For the second bend, place the back edge of the conduit 12 inches from the end of the conduit and bring the bend up to:

1. 10°
2. 45°
3. 90°
4. 135°

6-24. A job finds that a run of conduit between pull boxes will have five 90° bends. What, if anything, should be done to complete the conduit run?

1. Use a concealed conduit
2. Increase the radius of each bend
3. Use a conduit instead of one of the bends
4. Nothing

6-25. The type of fastener required to secure a length of conduit to a wall depends primarily on the

1. length of the conduit section
2. number of conductors connected in the circuit
3. composition of the wall
4. composition of the conduit

6-26. The type of connector most generally used for joining thin-wall waterproof conduit length to length is the

1. threader
2. indenter
3. compression
4. setscrew

6-27. Compared with the threadless method of joining metallic conduit, the method of joining PVC conduit is superior because the finished joints are

1. waterproof and vaporproof
2. explosionproof
3. corrosion resistant

6-28. What is the minimum radius that you should use when making a right-angle bend in a length of 1/2-inch PVC rigid conduit?

1. 1 in.
2. 5 in.
3. 3 in.
4. 7 in.

6-29. If you must connect the motor of a sump pump in a basement area to a source of electric current, which type of conduit is most suitable for the run?

1. Standard metal
2. REX
3. Latex impervious
4. PE

In items 6-30 through 6-34, select from column B the use for the outlet box in column A.

| A. <u>Types of Outlet Boxes</u> | B. <u>Uses</u> |
|---------------------------------|----------------------|
| 6-30. Gem box | 1. Ceiling outlet |
| 6-31. Handy box | 2. Exposed wiring |
| 6-32. Octagon box | 3. Switches |
| 6-33. 4-11/16 inch square box | 4. Range receptacles |
| 6-34. 4- inch square box | |

In items 6-35 through 6-37, select from column B the distance from the floor that is required in the installation of the type of receptacle in column A.

| A. <u>Types of Receptacles</u> | B. <u>Distances Above Floor</u> |
|--------------------------------|---------------------------------|
| 6-35. Wall fan | 1. 46 in. |
| 6-36. Toggle switch | 2. 48 in. |
| 6-37. Abovecounter | 3. 78 in. |
| | 4. 84 in. |

6-38. A 230-volt air conditioner should be served by a receptacle provided with one ground contact and

1. three horizontal slots
2. two horizontal slots
3. three slanted slots
4. two slanted slots

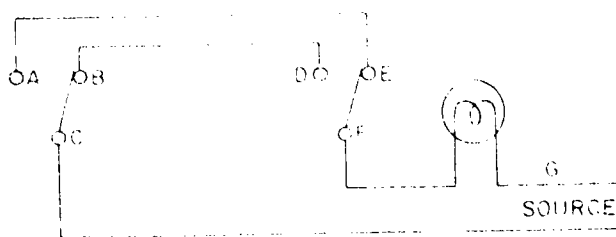


Fig. 6-41

6-41. The broken wire in the circuit represented by

1. OA and OB
2. OB and OC
3. OC and EF
4. EF and G

6-42. The lamp in the circuit of Figure (A) will not light up when the switch blades are in the positions represented by

1. OA and EF
2. OB and EF
3. BC and EF

6-43. Sketch a single light connected to a power source through a 3-way switch. Your sketch should show all out which of the following conditions:

1. The neutral wire connected directly to one side of the light
2. The hot wire connected directly to one switch
3. Two travelers connected between switches
4. The light connected between the center poles of both switches

6-44. The most hazardous space inside the building of a gasoline station is located

1. within 18 inches of the floor
2. within 18 inches of the ceiling
3. between the spaces described in 1 and 2 above

6-45. Except in specially approved cases, the minimum wire size that may be used for a service entrance conductor is

1. No. 6
2. No. 10
3. No. 12
4. No. 14

6-46. When installing a service entrance conductor, it must be run to

1. inside the building at a right angle to the service entrance
2. inside the building
3. inside the building, with it applied, from the weatherhead to the connection in the entrance service switch
4. inside the building where diameter is at least 1.5 inches

6-47. When an underground service conduit enters a building from under a concrete floor, it is fitted with a

1. conduit at the point where the conduit is brought through the floor
2. coupling whose top is made flush with the finished floor
3. thermoplastic insulator
4. rubber insulator

6-48. What minimum size of entrance switches must be used for fuse type and circuit breaker type service, respectively?

1. 30 amp; 50 amp
2. 50 amp; 30 amp
3. 50 amp; 60 amp
4. 60 amp; 50 amp

6-49. What type of automatic circuit breaker is normally used for (A) lighting panels and (B) power panels?

1. 15-amp single-pole for A, and 2-pole for B
2. 15-amp single-pole for A and 1-, 2-, or 3-pole for B
3. 15-amp double-pole for A and single-pole for B
4. 15-amp double-pole for A and 1-, 2-, or 3-pole for B

6-50. A distribution panel feeds two identical electrical loads, A and B. The best location for this panel is

1. at load A only
2. at either load A or at load B
3. between the two loads
4. near the entrance switch

6-51. Besides being listed numerically from top to bottom, how should the circuits on the panelboard be listed for clear identification?

1. Even numbers on the left
2. Odd numbers on the left
3. Odd numbers on the right

- 6-53. A 4-wire distribution system has 120 volt wires and one neutral wire. How much current will the neutral wire carry when the 120 volt wires carry 10 amperes and the third wire carries no current?
1. 10 amperes
 2. 20 amperes
 3. 30 amperes
 4. 40 amperes
- 6-54. Which of the following wire combinations is typical of a 4-wire distribution system?
1. 3 hot wires and 1 neutral wire
 2. 2 hot wires and 2 neutral wires
 3. 1 hot wire and 3 neutral wires
 4. 4 hot wires and 1 neutral wire
- 6-55. The neutral wire in a conductor may be identified by its:
1. color of insulation
 2. white or gray insulation
 3. green or red insulation
 4. size of any insulation
- 6-56. When wires are being pulled through a conduit, which of the following practices is NOT recommended as a means of facilitating the work?
1. Peeling insulation from the wire ends
 2. Applying tape to the wire insulation
 3. Lubing the wire insulation with grease
 4. Taping the wires to the back of a fish tape
- 6-57. Four wiring plan requires that exposed cable run horizontally to the floor joists above a basement floor. The cable should be run:
1. through bored holes in the floor joists or on a running board
 2. across the edges of the joists and secured with straps
 3. through rigid steel conduit strapped to the joists
 4. through type I plastic conduit strapped to the joists
- 6-58. The purpose of the overcurrent device in a motor branch circuit is to protect the motor, wires, and controls.
- 6-59. A fuse or circuit breaker is an adequate means of disconnecting a stationary motor provided its horsepower rating is:
1. 1/8 hp or less
 2. 1/4 to 5/8 hp
 3. 3/4 to 1 hp
- 6-60. What type of splice, if any, may be pulled through a conduit?
1. Duplex
 2. Western Union
 3. Wrapped
 4. None
- 6-61. When soldering two conductors that are too large to be heated adequately with a soldering iron, what means should you use to heat them?
1. An electric oven
 2. Merten solder
 3. An alcohol torch
 4. An oxyacetylene torch
- 6-62. The time-lag fuse protects against a short circuit better than an ordinary plug fuse does.
- 6-63. Which of the following conditions will cause a cartridge fuse to overheat or blow at less than its rated current?
1. Overly tight clip clamp
 2. Poor clip contact
 3. Old fuse link
- 6-64. You can cause a burr on the ferrule or terminal of a cartridge type fuse by:
1. inserting the fuse on a live circuit
 2. brightening the fuse with emery cloth
 3. tightening the spring clip
- 6-65. Which of the following conditions causes a fuse link to blow at a point between the reduced portion and the end of the link?
1. Short circuit
 2. Poor contact
 3. Light overload
- 6-66. When part of a circuit is out and the fuses have NOT blown, which of the following conditions exist?
1. Grounded circuit
 2. Shorted circuit
 3. Open circuit
 4. Overloaded circuit

6-64. You are using a 200-watt lamp to determine the cause of trouble in a ballasting wiring circuit. Which of the following conditions is an indication of a short?

1. The lamp burns at full brilliancy with the neutral open
2. The lamp burns with the neutral closed but goes out when the neutral is opened
3. The lamp does not light with the neutral open or closed

Learning Objective: Identify characteristics of incandescent lamps.

In items 6-65 through 6-67, select from column B the type of lamp having the design characteristic in column A.

| A. <u>Design Characteristics</u> | B. <u>Types of Lamps</u> |
|--|---|
| 6-65. Made of special glass whose resistance to thermal shock is high | 1. Clear lamps 2. Quartz iodine lamps |
| 6-66. Last twice as long as regular general service incandescent lamps | 3. Hard-glass lamps 4. Long-life lamps |
| 6-67. Installed where lamp replacement costs are high | |

Learning Objective: Recognize operating principles of fluorescent and incandescent lighting systems and techniques of maintaining them.

6-68. Why is a ballast required in a fluorescent lamp?

1. To limit current and supply proper voltage
2. To limit voltage and supply proper current
3. To act as a capacitor to improve power factor
4. To act as a reactor to improve power factor

Refer to table 6-2 in your textbook in answering items 6-69 through 6-71.

6-69. What condition could cause incandescent lamps in a lighting circuit to burn out frequently?

1. High voltage
2. Excessive vibration
3. Use of lamps having wrong rating
4. Each of the above

6-70. A fluorescent lamp is slow to light after the switch is turned on. If the line voltage is proper, what should you do to correct the condition?

1. Turn the luminaire on and off several times
2. Replace the starter
3. Remove the lamp and scrape the ends
4. Seat the lamp firmly

6-71. Which of the following is the best indication that a fluorescent lamp is nearing the end of its useful life and will soon burn out?

1. Slow starting
2. Increased noise from the ballast
3. Flickering
4. Flashing on and off

6-72. A smaller percentage of light is reclaimed by washing light reflecting surfaces than by dry wiping them.

6-73. A burned out fluorescent lamp in a live circuit may cause damage to the

1. line switch
2. ballast
3. electrodes
4. lamp holder

Assignment 7

Central Power Plant

Textbook: NAVENETRA 199-411 Pages 279-304

Learning Objective: Indicate characteristics of generators and generator accessories and principles of generating electricity.

- 7-1. Refer to textbook table 9-1. Which of the following gasoline-driven, alternating-current generators allows for a 120-volt, single-phase, 2-wire panel connection?
1. 5 kw
 2. 30 kw
 3. 45 kw
 4. 75 kw
- 7-2. The initial cost of a gasoline engine generator is lower than that of a diesel engine generator, but the maintenance costs are higher.
- 7-3. Which of the following generating requirements for communications and lighting can be met with the 1.5-kw gasoline-driven generator?
1. 120 volts, single-phase, 30 hertz
 2. 120/208 v lts, 3-phase, 50 to 60 hertz
 3. 120/240 volts, 3-phase, 50 to 60 hertz
 4. 120 volts, 3-phase, 60 hertz
- 7-4. Which of the following are important factors in the selection of advanced base generating equipment?
1. Voltage, phase, and frequency of power output
 2. Load deviation and availability of fuel
 3. Life of the installation and availability of skilled personnel
 4. All of the above
- 7-5. Acceptable values of an active advanced base's (a) annual load factor and (b) power factor would be
1. (a) 40%; (b) 95%
 2. (a) 45%; (b) 90%
 3. (a) 55%; (b) 80%
 4. (a) 60%; (b) 75%
- 7-6. The control panel for a central power plant consisting of two main generators is referred to as
1. a switchyard
 2. switchgear
 3. a switchboard
 4. a control board
- 7-7. The governor on an engine-driven alternator is used to maintain constant
1. output voltage by automatically adjusting engine speed
 2. output voltage by automatically adjusting resistance
 3. output frequency by automatically adjusting resistance
 4. output frequency under different load conditions
- 7-8. Before shutting down the prime mover of a power generating system, what action must you take to prevent dangerously high voltage from building up when the field circuit is suddenly opened?
1. Adjust the field rheostat so that resistance will be decreased
 2. Push the starter switch to the OPEN position
 3. Throw the field switch to the OFF position
 4. Connect the exciter field so that no shunting will occur across the exciter field coils

7-9. The function of the field rheostat in an alternator unit is to

1. dissipate sharp increases of voltage in the exciter
2. control the voltage output of the exciter
3. disconnect the exciter armature from the exciter field
4. set the value at which the voltage regulator holds the voltage constant

7-10. To obtain readings of the voltage and current output of a 3-phase generator, you should use the

1. voltage-regulator switch
2. voltage-regulator rheostat
3. field rheostat
4. meter switch

7-11. The power generated at the central power station is distributed from load point terminals called

1. switchgear
2. output cables
3. load terminals
4. bus bars

7-12. Which of the following switchboard instruments eliminates the need for numerous readings to determine power output?

1. Voltmeter
2. Ammeter
3. Wattmeter
4. Watt-hour meter

Learning Objective: Describe operating principles of statically regulated controlled rectifier (SRCR) generators.

7-13. Refer to figure 9-8 of your textbook and give the direction of current flow from the two power rectifiers.

1. To stator, then revolving field, then heat sink
2. To heat sink, then revolving field, then stator
3. To stator, then heat sink, then revolving field
4. To heat sink, then stator, then revolving field

7-14. Which component in the circuit of textbook figure 9-9 controls the field current of an SRCR generator?

1. Field rectifier
2. Silicon control rectifier
3. Power rectifier
4. Main heat sink

7-15. Under what load condition does the silicon controlled rectifier (SCR) allow little current to reach the field?

1. Full load
2. No load
3. Half load

7-16. What component of an SRCR generator can be damaged during its operation if metal contact is made between the generator frame and heat sink?

1. Stator
2. Field rectifier
3. Controlled rectifier
4. Blocking diode

7-17. Which of the following components in the voltage control circuit of textbook figure 9-12 protects the controlled rectifier in the event the rectifier shorts?

1. Blocking diode
2. Buildup relay
3. Buildup resistor
4. Regulator assembly

7-18. The regulator assembly of textbook figure 9-13 contains a circuit whose function is to

1. turn the SCR off
2. trigger the SCR
3. control the voltage added to the regulator
4. reduce voltage pulses across the SCR

In items 7-19 through 7-23, select from column B the part of the voltage level sensing circuit that carries out the function.

| A. Functions | B. Parts |
|--|--|
| 7-19. Holds the generator voltage constant as engine speed droops | 1. Filter choke |
| 7-20. Makes the regulator circuit independent of generator frequency | 2. Sensing reactor |
| 7-21. Smooths out the voltage sent from the voltage sensing circuit to the triggering circuit | 3. Noise Suppression |
| 7-22. Eliminates radio static produced by the generator | 4. Regulator |
| <hr/> | |
| 7-23. The primary winding of instrument transformer A is wound around a line carrying 200 amperes. The primary winding of instrument transformer B is wound around a line carrying 100 amperes. If instrument transformer A has a secondary winding with a current rating of 5 amperes, instrument transformer B will probably have a secondary winding with a current rating of | |
| | 1. 2 1/2 amp |
| | 2. 5 amp |
| | 3. 10 amp |
| | 4. 25 amp |
| 7-24. A transformer's low side is usually wound for 110 volts. What determines the ratio of turns on one side to turns on the other side? | |
| | 1. Rating of the low-voltage side |
| | 2. Rating of the high-voltage side |
| | 3. Difference in the ratings of the low-voltage and high-voltage sides |

Before alternators are paralleled, they must be operating at nearly the same speed, with the incoming one running slightly faster, since it will slow a bit as it takes the load. At the instant the new generator is switched on the line, it should be exactly in phase with the other.

- 7-25. The pointer of a synchroscope, textbook Figure 9-14, must be in what position when an alternator is placed on the line parallel to another alternator?
1. Rotating slowly in the slow direction and at 12 o'clock
 2. Rotating slowly in the fast direction and at 12 o'clock
 3. Rotating fast in the fast direction and at 6 o'clock
 4. Stationary at 6 o'clock
- 7-26. The work performed in an a-c generator by its slip rings, and commutator is done essentially by the action of
1. a bridge rectifier
 2. a rheostat
 3. the exciter field stator
 4. the generator armature stator

Learning Objective: Indicate fundamentals in the selection and installation of generating equipment.

- 7-27. A generator supplying power for an advanced base should be located near the
1. barracks site
 2. edge of the base
 3. points of small demands
 4. points of large demands
- 7-28. If you have to supply 4,200 watts of power to a 120-volt, single-phase load, excluding motors, what size and type of generator will you need?
1. 3-kw, 2-wire
 2. 3-kw, 3-wire
 3. 5-kw, 2-wire
 4. 5-kw, 4-wire

- 7-29. How should you compute the demand factor of a system? Assume that all pertinent values are given for, or obtained during, the system's period of greatest demand.
1. Multiply the system's true power by the current flowing through the load and divide by the voltage impressed on the load
 2. Measure the actual power used and divide by the power requirements of all the system's equipment
 3. Add the rated capacities of all electrical appliances, lights, heaters, motors, etc for each feeder; divide the smallest sum obtained by the largest sum obtained
 4. Measure the actual current through the load on each feeder; divide the smallest current value by the largest current value
- 7-30. The total connected load for your repair shop is 60 kw while the maximum demand is 40 kw. What is the demand factor?
1. 26%
 2. 50%
 3. 66%
 4. 75%
- 7-31. How do you determine the power factor of an electrical load?
1. Measure the actual current through the load on each feeder; divide the smallest current value by the largest current value
 2. Measure the actual power used and divide by the power requirements of all the system's equipment
 3. Add the rated capacities of all electrical appliances, lights, heaters, motors, etc for each feeder; divide the smallest sum obtained by the largest sum obtained
 4. Divide the load's wattmeter reading by the product of the load's voltage and current flow
- 7-32. What is the true power of a 120-volt single-phase motor that is drawing 15 amperes and has a rated power factor of 80 percent?
1. 1272 watts
 2. 1440 watts
 3. 2491 watts
 4. 3114 watts
- 7-33. Suppose two generators, A and B, are producing the same amount of power. Generator A operates with 50 percent power factor, generator B with a 100 percent power factor. Compare the amounts of current they require.
1. A requires twice as much as B
 2. A requires four times as much as B
 3. A requires one-half as much as B
 4. A requires the same amount as B
- 7-34. When wired to an electrical system, which of the following devices do NOT affect the reactive power of the system?
1. Drive motors
 2. Electric motors
 3. Constant-current regulators
 4. Welders
- 7-35. Assume you have the responsibility of providing shelter for advanced base generators. Before the Builders can construct a shelter, you must furnish them all the following information, EXCEPT the
1. number of generators to be sheltered
 2. size of the generators
 3. electrical power load
 4. arrangement of the exhaust system
- 7-36. Excess engine heat produced by a large generator set operating in a building can be removed by
1. providing suitable exits for exhaust gases
 2. opening all doors and hatches on the generating set
 3. placing the generator set on mounting shocks
 4. providing large louvered openings in the building walls at the front and back of the generator set
- 7-37. What is the best way of getting rid of carbon monoxide gas produced by a diesel-driven generator?
1. Extend the engine's exhaust pipe to the outside of the building
 2. Cool the gas in a cold water bath prior to exhaust
 3. Make certain that there are open fresh air ducts in the roof of the generator building
 4. Open all the doors and hatches on the generator set before starting it

7-38. Which of the following parts of an electrical power distribution system do NOT need to be grounded?

1. Transformer tanks
2. Generator bases
3. Distribution buses
4. Neutral wires

7-39. Refer to the representative grounding plan for an advanced base plant in textbook figure 9-21. What type of grounding cable is used at points R and A?

1. Mild plow steel
2. Insulated copper
3. No. 6 bare copper
4. 1/0 bare stranded cable

7-40. Assume you are connecting a branch ground cable to the main ground cable, using ground clamps. What must you do to the cable before tightening the ground clamps?

1. Take ground meter readings
2. Jumper all connections
3. Thoroughly clean the metal
4. Wash the metal with saltwater

7-41. Which of the following advantages does the thermit type of welding process provide for connecting branch cables to main cables?

1. It is less costly than other welding methods
2. It uses lower temperatures than brazing or soldering
3. The weld is usually completed within 10 seconds with no damage to conductor insulation
4. Each of the above

When answering items 7-42 through 7-44, refer to textbook table 9-2.

7-42. When it is necessary to obtain a 127/220, 3-phase, 4-wire voltage from a 3-phase generator you should connect the line leads to

1. T2 and T9; T8; T3 and connect T5 to T6
2. T3, T8 and connect T2 and T9 and T5 to T6
3. T2, T1, T3 and connect T4 to T7, T6 to T9 and T5 to T8
4. T1 and T7, T3 and T9, T2 and T8 and connect T4, T5, T6 and T0

7-43. Which of the following coil lead combinations do you use to obtain 220-volt, single-phase power from a 3-phase, dual-voltage generator?

1. T1 and T2; T3 and T8
2. T2 and T8; T3 and T9
3. T1 and T4; T7 and T0
4. T3 and T4; T8 and T9

7-44. Which coil leads should be properly insulated when NOT used for single-phase service?

1. T0, T1, T4, and T2
2. T0, T1, T4, and T7
3. T7, T4, T1, and T3
4. T1, T4, T7, and T2

7-45. Which of the following is a consequence or result of generator leads to meet certain load conditions?

1. Change in the size of fuse needed to protect the generator
2. False reading of the switchboard ammeter
3. Change in the generator voltage output and rated current
4. Each of the above

7-46. Assume that the output voltage of a generator not equipped with a changeover block is to be reconnected from 220-volt to 440-volt operation. The meter shows a full-scale deflection at the full load current of 76 amp. If you reconnect to 220 volts without changing the current transformer connections from mid-tap to full position, a full load current will produce a meter deflection of

1. 1/4 scale
2. 1/2 scale
3. 3/4 scale
4. full-scale

7-47. Tap connections on the voltage regulator must be changed in order to keep constant the ratio of primary voltage to secondary voltage.

7-48. A changeover block on an advanced base generator is used as a means of

1. disconnecting the generator leads from the potential transformers
2. disconnecting the generator leads from the current transformers
3. rearranging the connections of load cables to change phase rotation
4. rearranging internal windings of the alternator by coil lead reconnections

7-49. A bus bar may be used as the central point for collecting the paralleled outputs of two or more generators of a portable generating station.

7-50. Assume you must change a feeder line running to Company A shop area. Which of the following steps must be taken before any work is to be done on the line and generator?

1. Shut off the generator prime mover
2. Close the switch leading to feeder line
3. Lock the internal circuit breaker in OFF position
4. Both 2 and 3 above

7-51. Which of the following factors is important in the installation of a bus bar system?

1. Determining the size of wire that will carry the load current
2. Using circuit breakers or fuse knife switches to control the output of each feeder line
3. Supplying generators properly
4. Each of the above

7-52. Placing capacitors as close to the inductive load as possible provides

1. maximum power factor correction from the capacitor back to the source of power
2. minimum power factor correction from the capacitor back to the source of power
3. protection in the event of an open circuit
4. power factor improvement in series circuits

Learning Objective: Indicate techniques of inspecting and servicing a generator set.

7-53. What step in the process of placing a generator in operation follows your visual inspection of the generator?

1. Servicing the generator
2. Servicing the prime mover
3. Setting up the generator
4. Setting up the generator shelters

7-54. Assume that you must prepare your own electrolyte for the battery used to start your advanced base electric power generator. You are using an acid of 1.835 specific gravity and desire a specific gravity of 1.290. What proportions of water and acid do you use?

1. 1 part water; 4 parts acid
2. 2 parts water; 3 parts acid
3. 5 parts water; 2 parts acid
4. 2 parts water; 1 part acid

7-55. You check the temperature of the electrolyte being added to a storage battery and find that it is within the proper range. Which of the following is a possible temperature of the electrolyte?

1. 40°F
2. 55°F
3. 75°F
4. 100°F

7-56. What is the minimum amount of time that you should let a battery freshly filled with electrolyte stand before you put it in service?

1. 5 min
2. 20 min
3. 1 hr
4. 24 hr

7-57. As a general rule for charging batteries, the rate of charge is low. The duration of charge, however, is measured from the time it takes battery voltage and specific gravity (corrected to 80°F) to become constant. Give the approximate charging rate and the measured time of charge.

1. One ampere, one hour
2. Three amperes, three hours
3. Five amperes, five hours
4. Seven amperes, seven hours

7-58. You can shorten the warmup period for the 600-kw generator by

1. opening and latching the fan cover
2. covering the main diesel engine exhaust stacks
3. closing the bypass shutters or doors
4. closing the roof hatches and side louvers

7-59. Suppose you are to calculate for generator collector brush pressure. Use the following: Manufacturer's recommended tension, 1.5 lbs on brush width, 1.5 inch; brush thickness, 1.125 inch; least 10 brush pressure per square inch?

- 4.6 psi
- 11.86 psi
- 16.89 psi
- 17.92 psi

7-60. In wintertime, you can minimize the amount of moisture that condenses in the fuel tank of a diesel engine by refilling the tank after every water or oil change.

7-61. After tightening connections, how should you treat battery terminals to reduce corrosion?

- Clean them with solvent.
- Coat them lightly with grease.
- Wipe them off with a dry rag.
- Wipe them off with a wet rag.

Learning Objective: Indicate principles and techniques of operating a power station.

7-62. Which of the following parameters is *not* varied by the engine operating lever of a diesel-driven a-c generator?

- Regulation of engine speed during normal operation.
- Admission of compressed air for starting the engine.
- Exact matching of engine speed to the frequency of a energized bus.
- Manual control of engine speed during starting and stopping.

7-63. The governor of a diesel-driven generator holds the engine to an operating speed selected by the operator. To make minor adjustments in this regulated speed, you must use the

- speed control lever.
- operating lever.
- governor knob.
- load-actuating lever.

7-64. Assume the engine speed is controlled by the governor. To transfer the engine from governor speed control to engine stop, which lever must you operate?

- Engine operating lever.
- Load-actuating lever.
- latch lever.
- Both of the above.

7-65. If the output of an a-c generator is only matched to the bus requirements, you should energize the bus by operating the

- generator circuit breaker.
- voltage regulator switch.
- field switch.
- motor governor control switch.

7-66. If two or more a-c generators may be connected in parallel to feed a single bus, their output must be carefully matched in all characteristics EXCEPT

- Voltage.
- current.
- frequency.
- phase.

7-67. Assume you must parallel another generator on the line. Normally, you synchronize them by using the lamp method or a synchroscope. When using the lamp method, how many lamps should glow and how many should remain dark the instant the two generators are paralleled?

- One bright, two dark.
- Two bright, one dark.
- Two bright, two dark.
- One bright, one dark.

7-68. Suppose the "all-dark" method is used to synchronize and it is not possible to obtain lamps having a voltage rating twice the generator terminal voltage. What other devices can be used instead of these lamps?

- Stepdown transformers.
- Several lamps in series.
- Voltage dropping resistors.
- Any of the above.

7-69. The method of synchronizing large, high-speed generators requires that the line circuit be closed when:

1. all lamps reach minimum brightness
2. all lamps are of equal brilliancy
3. the incoming alternator's frequency is slightly behind the reference paralleling alternator's frequency
4. the incoming alternator's frequency is slightly greater than the already-operating alternator's frequency

7-70. You are paralleling a new generator onto the line. You will connect the generator into the circuit when the indicator of the synchroscope shown in Figure 9A is:

1. steadily over the vertical indicator
2. just to the left of, and slowly approaching, the vertical indicator
3. just to the right of, and slowly approaching, the vertical indicator
4. turning slowly in either direction, and directly over the vertical indicator

7-71. In control the load on paralleled generators, you will normally adjust the:

1. generator speed
2. field current regulator
3. series field rheostat
4. shunt field rheostat

7-72. After you have put in an alternator on an energized line, you must adjust the voltage regulator to obtain the desired:

1. power factor
2. load balance and line frequency
3. line frequency
4. phase relationship

7-73. Which of the following steps should you perform first when you must secure a generator from parallel operation?

1. Open the field switch
2. Shift the load to the other generators
3. Stop the engine
4. Trip the generator circuit breaker

7-74. Which of the following events ought to take place in case of an overspeeding engine, and overheated engine, or low lubricating oil pressure?

1. The main circuit breaker trips
2. The engine shuts down
3. A light or alarm indicates the malfunction
4. None of the above

7-75. Switchboard instruments show how the system is operating and reveal overloads, improper division of kilowatt load, and other abnormal operating conditions.

Assignment 8

Central Power Stations; Government Power Distribution

Textbook NAVEDTRA 10696-H1 Pages 306-349

Learning Objectives: Indicate principles of standing watch at a power station and identify operator maintenance practices.

- 8-1. How many watches are scheduled for each 24-hour period at most Navy central power stations?
1. Three
 2. Four
 3. Six
 4. Eight
- 8-2. One purpose of keeping a generator station log is to help determine when a particular piece of equipment needs preventive maintenance.
- 8-3. To be used for log entries, a form must not only describe the hourly performance of the generator, but also the performance of all controlling and indicating devices of the equipment.
- 8-4. All of the following are daily maintenance practices EXCEPT
1. checking the fuel tank for leaks
 2. checking the level of the coolant
 3. draining water from the fuel tank
 4. greasing the fuel transfer pump
- 8-5. When changing oil in the engine crankcase you should also change the
1. battery electrolyte
 2. brushes
 3. coolant
 4. oil in the oil bath air cleaner
- 8-6. How often should the load contactor faces be cleaned?
1. Daily
 2. Weekly
 3. Every 3 months
 4. Yearly
- 8-7. All but one of the following are operator maintenance practices to be performed every three months of generator operation. The exception is:
1. inspecting the pole shaver
 2. renewing the oil filter element
 3. cleaning load contactor faces
 4. greasing the fuel transfer pump
- 8-8. Inspections of generator plant switchgear equipment should be made at least once every
1. week
 2. month
 3. 6 months
 4. year
- 8-9. Which of the following steps is normally included in a yearly check of switchgear components?
1. Checking for burned out indicating lamps
 2. Testing the operation of the switchgear position-changing mechanisms
 3. Wiping all dust from the bus bars and insulating material
 4. Each of the above

8-10. When the main contactor switch opens and shuts down the engine, and the oil pressure indicator bulb light up, the generator's engine oil pressure has fallen below 10 psi.

8-11. Personnel engaged in working on an energized circuit must be insulated from ground and have adequate lighting.

Learning Objective: Identify fundamentals of troubleshooting SRCR controlled regulators.

8-12. Which of the following will cause a power rectifier to fail?

1. Excessive current
2. Excessive voltage
3. Lack of silicon lubricant
4. Each of the above

8-13. The resistance of a power rectifier is greater when the direction of current flow is from plus to minus than when the direction is minus to plus.

8-14. When does a silicon controlled rectifier allow direct current to flow?

1. Only when a large positive voltage is applied to its gate terminal
2. Only when a small positive voltage is applied to its gate terminal
3. Only when a small negative voltage is applied to its gate terminal
4. Only when a large negative voltage is applied to its gate terminal

8-15. Refer to textbook figure 9-40. At which terminals of a silicon controlled rectifier should you receive an ohmmeter reading of 10 to 250 ohms?

1. Anode and Cathode
2. Cathode and Gate
3. Cathode and Pigtail
4. Anode and Gate

8-16. Which type of rectifiers in generating station equipment allows all the alternating current to flow?

1. Single diode
2. Power SCR
3. Full-wave

8-17. You are troubleshooting a full-wave rectifier and have the ohmmeter hooked up to the No. 3 plus terminal and No. 4 minus terminal of the rectifier. What kind of ohmmeter reading indicates a faulty rectifier?

1. High
2. Low
3. None

8-18. In troubleshooting the component parts of the SRCR controlled regulator, for which of the following do you check the saturable reactor?

1. Resistance
2. Continuity and grounds
3. Excessive voltage
4. Excessive current

8-19. When placed in a circuit, what component of the SRCR controlled regulator is used to smooth out rough direct current?

1. Saturable reactor
2. Power rectifier
3. Choke
4. Any of the above

Identify fundamentals of designing an overhead power distribution system.

8-20. Which of the following are basic factors to consider in designing a powerline?

1. Transformer sizes, class of poles, and route
2. Pole heights and the number of men needed to pike poles
3. Transformer sizes, load requirements, and number of crossarms needed
4. Pole heights and direction that poles face on long runs

8-21. The 1-to-10 classification of wooden poles indicates the capability of a pole to resist an applied load at what point or points on the pole?

1. Midpoint between top and bottom of the pole
2. 2 feet from the top of the pole
3. 6 feet from the bottom of the pole
4. 10, 15 and 20 feet from the top of the pole

- 8-22. Which of the following types of insulators is designed for use with a 36,000- volt distribution system?
1. One-piece porcelain pin
 2. Two-piece porcelain pin
 3. Suspension
 4. Each of the above
- 8-23. A primary voltage distribution feeder can be made to have a no-voltage condition and can be held in that condition while repairs are being made on the secondary line, if the feeders are equipped with
1. a secondary protective device
 2. an oil circuit breaker
 3. lightning arresters
 4. disconnect switches
- 8-24. Which of the following circuit arrangements is provided by lightning arresters?
1. Short circuit for both voltages and open circuit for line voltages
 2. Short circuit for line voltages and open circuit for high voltages
 3. Short circuit for direct current and open circuit for alternating current
 4. Short circuit for alternating current and open circuit for direct current
-
- Learning Objective: Describe procedures and equipment for raising and guying poles.
-
- 8-25. The minimum distance between gains for crossarms where the voltage of the circuit will NOT exceed 3,700 volts must be at LEAST
1. 12 in.
 2. 18 in.
 3. 24 in.
 4. 48 in.
- 8-26. Why should a pole hole be 6 inches larger on all sides than the pole, and why must the hole be larger at the bottom than at the top?
1. To allow for wood expansion due to water absorption and to prevent undue strain on the pole
 2. To allow for tamping and for shifting the pole to an upright position
 3. To allow cement to be added and to permit forming a cement cave
 4. To provide water drainage and to allow shifting the pole after it has been placed
- 8-27. As each new position is reached in the process of raising a pole, the weight of the pole is temporarily supported by a
1. butt head
 2. jenny
 3. cant hook
 4. crossarm
- 8-28. How is the term "facing the gains" related to the job of setting power poles?
1. On straight line runs the poles must be turned in their holes so the gains face each other in every other span
 2. On curved runs the poles must be turned in their holes so the gains face each other in every other span
 3. On straight line runs the poles must be turned in their holes so that the gains all face in one direction
 4. On curved runs the poles are set in any position as long as the gains make the crossarm lie at right angles to the wire run
- 8-29. In helping to set powerline poles, a piker should not brace his pike pole on his stomach.

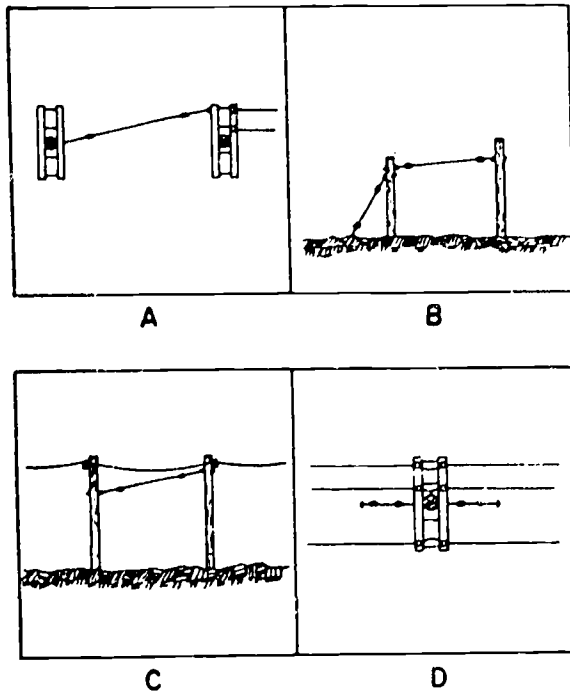


Figure 8A

8-30. Which parts of figure 8A illustrate, an application of a line guy, a head guy, an arm guy, and a stub guy, in that order?

1. A, C, B, D
2. B, D, A, C
3. C, D, A, B
4. D, C, A, B

8-31. Guying a pole is done in order to

1. maintain proper leveling of crossarms
2. keep the pole in position and help strengthen it
3. properly sag the individual wire spans
4. keep a pole-mounted transformer from pulling a pole out of alignment

8-32. The purpose of the porcelain strain insulators that are inserted in a guy is to

1. protect the guy from excessive strain
2. break up the guy into short lengths of electrically insulated segments
3. make the guy easier to install
4. allow for expansion and contraction of the guy with temperature changes

8-33. Which type of guy anchor is recommended for use in sand?

1. Never creep
2. Expanding
3. Log
4. Screw

Learning Objective: Identify fundamentals of inspecting and maintaining climbing equipment.

8-34. Upon discovering enlarged tongue holes on your safety belt, you should replace the safety belt.

8-35. The first step in the periodic servicing of the leather in your climbing equipment is to

1. rub down with a soft cloth
2. apply "neat's-foot oil"
3. apply saddle soap
4. clean with a damp sponge and mild soap

8-36. The maximum allowable difference in gaff length of a pair of climbers is

1. 1/16 inch
2. 1/8 inch
3. 1/4 inch
4. 3/8 inch

8-37. The proper length of the gaff on lineman's climbers is at LEAST

1. 1 1/4 inch on the inner face
2. 1 1/2 inch on the outer face
3. 1 1/2 inch on the inner face
4. 2 1/4 inch on the outer face

8-38. How should the gaffs be sharpened?

1. With a file, but not to a needlepoint
2. With a file, to a needlepoint
3. With an emery wheel, but not to a needlepoint
4. With an emery wheel, to a needlepoint

Learning Objective: Recognize techniques or practices in pole climbing and pole-top resuscitation.

8-39. While climbing a pole with the aid of climbers, why must you grasp each side of the pole with your hands?

1. To support a part of your weight
2. To provide proper balance
3. To aid in sinking the gaffs into the pole
4. To maintain a stiff-legged position

8-40. You have climbed a pole to the desired height and have positioned your feet so that the left foot is slightly above the right and slightly bent. You are now ready to secure the safety belt. What is your first move?

1. Unsnapping one end of the safety strap
2. Wrapping your right arm around the pole
3. Crooking your left arm around the pole
4. Grasping one end of the safety strap with your left hand

8-41. After you have heard the snapping sound indicating that the safety strap is secured to the D-ring, what should you do next?

1. Release your left arm from the pole
2. Check your tool belt for the tools you will need
3. Look at the snap to make sure it is secured to the ring
4. Test the strap with your weight

8-42. A striker who is about to climb a newly set pole checks his body belt and safety strap, slips a line wrench and a line hammer into the tool loops on his body belt, and begins to climb. What other steps should the striker have taken before climbing the pole?

1. He should have tested the pole, and he should have checked his climbers
2. He should have taken a handline up to pull up his line wrench and hammer, and he should have tested the pole with a pike pole
3. He should have checked his climbers, and he should have carried his tools in his hand
4. He should have placed all his tools in a canvas bag hooked to his body belt, and he should have checked his climbers

8-43. When working on a crossarm near the top of a pole, you should place the safety strap around the

1. pole, just under the crossarm
2. pole, just above the crossarm
3. pole, just under the crossarm on one side and over it on the other side
4. crossarm brace

8-44. When giving pole-top resuscitation to an electric shock victim, you should provide extra support to the victim's body by

1. bringing your safety strap up between his legs
2. attaching his safety strap to your D-rings
3. attaching your safety strap to his D-rings
4. placing your safety strap around both the victim and the pole

8-45. Unlike the artificial respiration administered to a victim in the prone position, the pole-top resuscitation method uses

1. a cycle frequency of approximately 12 times per minute
2. continued repetition of cycles until the victim regains consciousness or is pronounced dead
3. repeated pressure against the abdomen
4. steady rhythm of repeated movements

8-46. What treatment should you give to an electric shock victim as soon as he regains consciousness?

1. Wrap him in a blanket and keep him lying quietly
2. Get him to swallow some whiskey or some hot coffee
3. Force him to stand up and move around
4. Place him in a sitting position until help arrives

Learning Objective: Point out practices in raising and mounting crossarms and stringing and tying in conductors.

8-47. Assume that you have mounted a crossarm on a pole. After you set the pole, what steps complete the crossarm installation?

1. Leveling the crossarm and fastening the crossarm braces to the pole only
2. Leveling the crossarm and tightening the through-bolt only
3. Tightening the through-bolt and fastening the crossarm braces to the pole only
4. Leveling the crossarm, fastening the braces to the pole, and tightening the through-bolt

8-48. Normally the conductors are taken from a reel which is

1. mounted on a freely revolving axle
2. held solidly in place
3. rolled over the ground
4. placed on its side and free to turn

8-49. When a crew is stringing several spans at once, how are the wires initially sagged?

1. Less on one end nearest the cable reel and more on the other end
2. Less on the end farthest from the cable reel and more on the cable reel end
3. To the correct sag in a span on either end of the group of spans
4. To the correct sag at the center span

8-50. At 30°F, the desired sag for a 200-foot span of AWG No. 2 wire is 20 inches. In comparison, the desired sag for this span of wire at 60°F is

1. 10 inches or less
2. between 10 and 15 inches
3. more than 20 inches but less than 40 inches
4. the same, 20 inches

8-51. When should tie wires be placed on the conductors' insulators once the conductors are strung and sagged?

1. As soon as possible after stringing
2. After exactly 2 hours
3. After 1/2 hour to 4 hours depending upon the length of the run
4. After 24 hours regardless of size of wire or length of run

8-52. Concerning the use of tie wire in tying in conductors, which of the following statements is true?

1. Do not wrap tie wire too tightly around primary conductors or insulators
2. Always use number 2 tie wire
3. Previously used tie wires that are long enough may be reused
4. Always use annealed tie wire

8-53. What should be the minimum clearance through air between a metal insulator pin and a crossarm brace?

1. 1/2 in.
2. 1 1/2 in.
3. 3 in.
4. 5 in.

8-54. Lag screws may be driven into place when the entire length of the screw is used.

Learning Objective: Indicate types of radio interference produced by powerlines.

In items 8-55 through 8-57, select from column B the type of interference that results from the cause in column A.

| | <u>A. Causes</u> | <u>B. Types of Interference</u> |
|-------|--|----------------------------------|
| 8-55. | Nonlinear rectification in a corroded connection | 1. Corona 2. Cross modulation |
| 8-56. | Localized excessive voltage stress | 3. Spark discharge |
| 8-57. | Ionization of the air when the voltage gradient exceeds a critical value | 4. Eddy currents |

Learning Objective: Identify operating principles and installation practices for distribution transformers.

8-58. A dry-type transformer is cooled by transfer of heat from the transformer to air surrounding it.

8-59. In an oil-filled distribution transformer with a corrugated metal case, the corrugations increase the ability of the unit to dissipate heat to the air. The oil serves to

1. reduce eddy currents
2. lubricate the moving parts
3. carry the heat from the coils to the surface of the case
4. provide a better path for electromagnetic flux than air provides

8-60. Which method of mounting a small transformer should you use if the latest in mounting gear is at hand?

1. A single crossarm method
2. A double crossarm installation
3. A two-pole mounting platform
4. One pole using through-bolt bracket suspension

When answering items 8-61 and 8-62, assume that a secondary is wired as illustrated in figure 8B and the accidental connection, as shown, was due to a live primary line falling on a secondary service drop wire.

8-61. At the time of the accident, what was the voltage on the appliance and why?

1. Zero volts, because the voltage short would cause the associated substation circuit breaker to open
2. 110 volts, because the secondary of the transformer is wired in series
3. 220 volts, because the neutral is wired to ground at the substation
4. 2,300 volts, because there is no voltage or current path to ground

8-62. What action, if any, must be taken to prevent injury to persons and damage to property in the event of this type of an accidental connection?

1. Install fuses in the transformer secondary
2. Install a grounded wire at the service switch to the neutral wire and the box
3. Install fuses in the transformer secondary hot wires
4. None

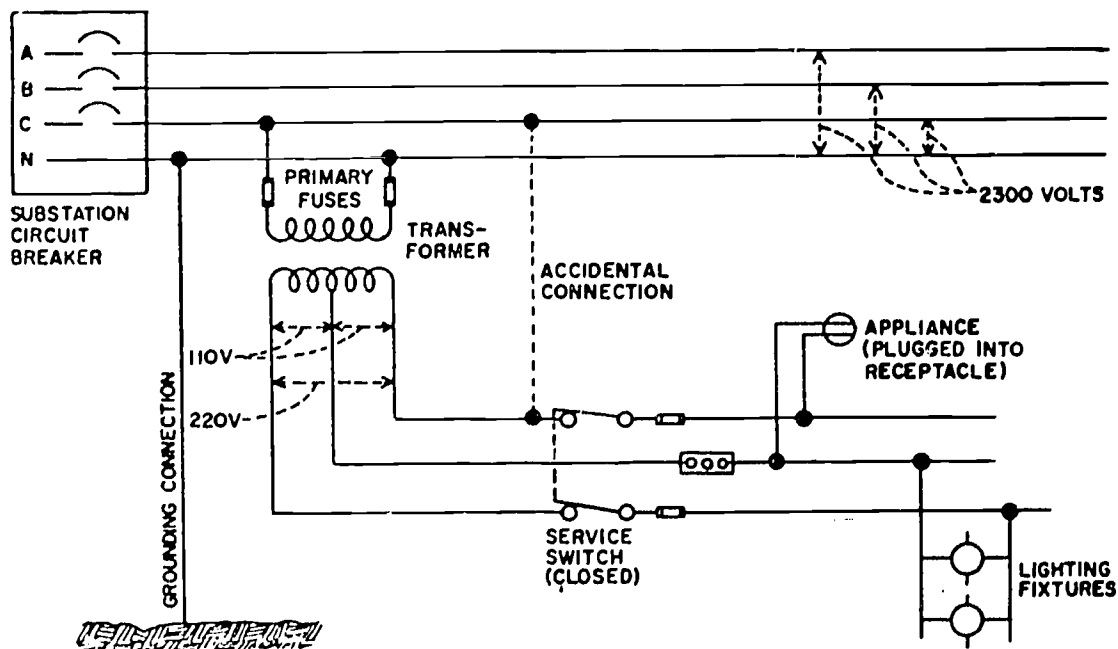


Figure 8B

8-63. Assume that a ground rod has been installed to ground the tanks of a pole-mounted transformer. The rod was located 4 inches from the base of the pole, and the top of the rod was 6 inches below ground level. The ground wire was run down the pole, stapled to the pole, and connected to the ground rod. This installation was unsuitable because the ground

1. rod was too close to the pole
2. rod was driven too far down
3. wire was stapled to the pole
4. wire was not protected from mechanical damage

8-64. What is the coil voltage of a transformer connected wye-wye when the primary voltage is 2400/4160?

1. 2,200
2. 2,400
3. 4,090
4. 4,160

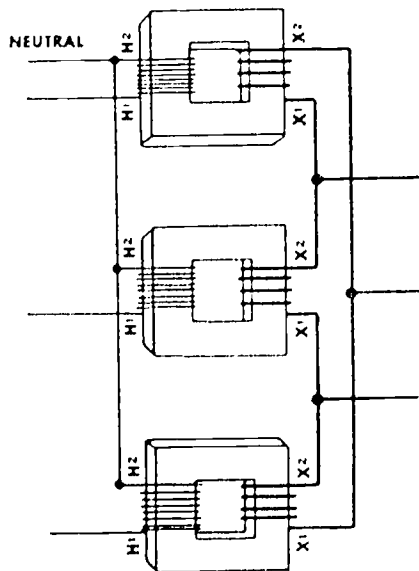


Figure 8C

8-65. The transformers in figure 8C are connected

1. delta-delta
2. delta-wye
3. wye-delta
4. wye-wye

8-66. What type of connection is made for three-phase power loads if one of three single-phase transformers in a bank fails?

1. Delta-delta
2. Open-delta
3. Single-phase
4. Two single-phase transformers in parallel

8-67. One of three 37.5-kVA transformers connected delta-delta is removed from a bank which normally produces 115.5 kVA. The remaining two are connected open-delta. What is the approximate amount of power that is now available without overloading the transformers?

1. 50.0 kVA
2. 65.0 kVA
3. 75.0 kVA
4. 96.5 kVA

8-68. You have connected three single-phase transformers delta-wye for both light and three-phase power. Which of the following voltage combinations is now possible?

1. Single-phase from only one transformer and three-phase from all three
2. Single-phase and three-phase from all three
3. Single-phase from each transformer and three-phase from all three together
4. Single-phase from one transformer and three-phase from the other two

8-69. Which of the four secondary wires can be used for 110-volt single-phase loads after three single-phase transformers are connected delta-wye for both single-phase lights and three-phase power?

1. Any two of the phase wires
2. One of the phase wires and the neutral
3. Any two phase wires and the neutral
4. Either one of two particular phase wires and the neutral

Assignment 9

Overhead Power Distribution (continued);
Underground Power Distribution; Communication
Systems

Textbook NAVEDTRA 10636-H: Pages 350-397

Learning Objective: Indicate operating principles of street lighting circuits and techniques of circuit troubleshooting.

9-1. In a series street-lighting circuit, power is supplied by a transformer which maintains a constant

1. voltage
2. current
3. power factor

9-2. In street lighting, why is a ballast used with the mercury vapor lamp?

1. To limit current to the lamp
2. To supply the lamp with a negative voltage
3. To provide a pilot circuit to the lamp for external control
4. To enable more than one lamp to be lighted

9-3. Which of the following conditions is likely to cause the lamps of a series circuit to burn dimly?

1. Defective lamp or lamps
2. Defective regulator
3. Blown primary fuse
4. Overloaded regulator

9-4. In sectionalizing an open-loop series circuit, you find that the lamps in the shorted section of the circuit will not light up, but the lamps in the rest of the circuit will light up. Which of the following statements about this series circuit is TRUE?

1. Opens exist in both sections
2. The open is in the shorted section
3. The open is in the section that was not shorted out

Learning Objective: Point out principles of identifying and arranging obstruction lights.

9-5. What should be the color and minimum candle-power of obstruction lights?

1. Red, 10 candlepower
2. Aviation red, 100 candlepower
3. Blue, 10 candlepower
4. Blue, 100 candlepower

9-6. In addition to lights at the top, how many intermediate sets of lights will be needed for a vertical structure 450 feet tall?

1. One
2. Two
3. Three
4. Four

9-7. What is the maximum distance between lights on overhead wiring that is located 3,000 feet from an airfield?

1. 50 ft
2. 150 ft
3. 300 ft
4. 600 ft

Learning Objective: Indicate construction features of manholes, ducts, and trenches.

9-8. Which of the following manholes should the CEs find most suitable for installing cables without bending them sharply and damaging their lead sheaths and without being cramped for head room?

1. 5-ft deep circular manhole
2. 5-ft deep rectangular manhole
3. 7-ft deep elliptical manhole
4. 9-feet deep square manhole

9-9. Water drainage from each manhole should be provided by means of

1. ducts that slope away from the manhole
2. pumps installed at the manhole
3. a central drain hole, a drain line, and a sump for the manhole
4. a series of drainage holes bored in the deck of the manhole

9-10. Which of the following tools should be used to turn down the ends of Orangeburg tile ducts which have been cut to an odd length and are to be joined?

1. Hacksaw
2. File
3. Field tooling lathe
4. Hacking knife

9-11. What is the minimum depth below ground level that duct work should be placed?

1. 1 ft
2. 18 in.
3. 2 ft
4. 30 in.

Learning Objective: Identify practices in cable pulling.

9-12. To aid in performing a future task, which of the following actions should the crew perform as it connects the lengths of duct?

1. Allowing space for at least 3 inches of cement under the lowest duct line
2. Laying-in a pulling wire
3. Sloping the duct line from the center of the run to the manholes
4. Installing only six lines of ducts between manholes

9-13. You are preparing a cable for pulling. After securing the bolt to the end of the cable, the end of the cable is made watertight by

1. sweating (soldering) the wire ends to the wire binder
2. beating the ends of the cable over the solder sweat
3. wrapping tape between the bolt and the lead sheath
4. closing the sheath down against the bolt and wiping between the sheath and bolt with melted solder

9-14. The reel of textbook figure 11-8 is properly positioned. What is likely to happen as cable is pulled from the reel into the manhole?

1. The protective boot will fall into the manhole
2. The bend in the cable will reverse itself
3. The reel will turn clockwise
4. The reel jacks will slide toward the edge of the manhole

9-15. Suppose cable is being winched into a duct from a reel that is in sight of the winch operator. Which of the following is a duty for the operator?

1. Inspecting the cable for defects as it pays off the reel
2. Seeing that the cable pays off the reel properly
3. Sending signals to the man who guides the cable into the duct
4. Making sure the winch line winds onto the reel properly

Learning Objective: Recognize principles and techniques of splicing cable in an underground power distribution system.

The following information, and the table below, are to be used as needed, to answer items 9-16 through 9-27. An electrical system is to be installed in an airfield. Manholes and handholes are to be constructed on the jobsite by a crew of Builders. As a Construction Electrician, you are a member of the electrical crew. You will be working with a single-conductor, 500-MCM, lead-covered, rubber-insulated cable. All cable splicing will take place in the manhole or handholes.

| CODE NO | SIZE OF LARGER CONDUCTOR AWG OR MCM | DIMENSIONS (INCHES) | | | | |
|---------|-------------------------------------|---------------------|--------|------------------|-------|-------|
| | | LEAD SLEEVE | | CONNECTOR LENGTH | A | B |
| | | I D | LENGTH | | | |
| 1 | 6 | 1 1/2 | 9 | 1 1/2 | 3 1/2 | 1 |
| 2 | 3 | 1 1/2 | 9 | 2 | 3 1/2 | 1 1/4 |
| 3 | 2 | 1 1/2 | 9 | 2 | 3 1/2 | 1 1/4 |
| 4 | 2/0 | 2 1/2 | 11 | 2 | 4 1/2 | 1 1/4 |
| 5 | 4/0 | 2 1/2 | 11 | 2 1/2 | 4 1/2 | 1 1/2 |
| 6 | 350 | 2 1/2 | 11 | 2 1/2 | 4 1/2 | 1 1/2 |
| 7 | 500 | 2 1/2 | 12 | 3 | 4 1/2 | 1 1/2 |
| 8 | 750 | 3 | 13 | 3 1/2 | 5 | 2 |
| 9 | 1500 | 3 1/2 | 18 | 5 | 5 1/2 | 2 1/2 |
| 10 | 2000 | 3 1/2 | 18 | 6 | 6 1/2 | 3 1/2 |

9-17. When do you place the scraped and coated sleeve on one of the cable ends?

1. Right after smoothing the inside of the sleeve
2. Just prior to tinning the connector
3. Right after soldering the connector to the conductors
4. Just prior to reinsulating the joint

For items 9-18 and 9-19, refer to figure 9A.

9-18. What is the distance of A?

1. 3 1/2 in.
2. 4 1/2 in.
3. 4 3/4 in.
4. 5 3/4 in.

9-19. What is the distance of B?

1. 1 in.
2. 1 1/4 in.
3. 1 1/2 in.
4. 1 3/4 in.

Straight joint, 5000-volt rubber-insulated.

9-16. All water is removed from a manhole before cable splicing begins in order to prevent

1. methane gas from accumulating
2. splices from absorbing moisture while they are being made
3. working conditions from becoming unsafe

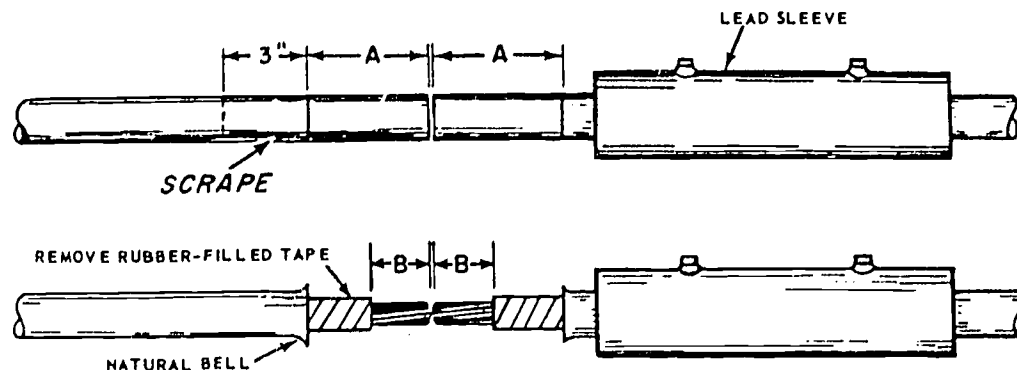


Figure 9A

9-20. At this stage, you have placed the split sleeve connector over the conductors. Cotton tape is then wrapped around the ends of the insulation in order to keep the insulation from melting or catching fire. Now, how do you permanently affix the connector to the conductors?

1. By crimping the connector onto the conductors
2. By soldering with a soldering iron and wire solder
3. By soldering with a butane torch and bar solder
4. By pouring molten solder over the connector

9-21. Copper, solder, and lead filings or grains should be removed from the insulation and the bare metal at the area of the splice by

1. scraping with a flat file
2. pouring molten lead or solder over the area
3. pouring hot taping oil over the area
4. spraying the area with compressed air

9-22. The last taping step in completing the splice involves the use of

1. friction tape, half-lapped, built up in two layers
2. rubber tape, half-lapped, built up 5/16 inch over the connector
3. friction and rubber tape, half-lapped built up 5/8 inch over the connector and cable insulation
4. rubber and friction tape, half-lapped built up 5/16 inch over the connector conductors and cable insulation but tapering down at the ends of the wrap

9-23. You are now ready to wipe the lead sleeve to the cable. The lead sheath is scraped clean and stearine flux is applied for a distance of 3 inches back on each cable. After you center the sleeve over the splice area, what is the next step?

1. Dressing the ends of the sleeve to form a tight fit around the cable sheath
2. Wiping the sleeve to the cable sheath by the stick-and-torch method
3. Wiping the sleeve to the cable sheath by the hot-lead ladling method
4. Applying paper pasters on the sleeve and the cable sheath

9-24. Assume that you have performed all the proper operations in preparation for wiping a joint. Then you prepare the wiping metal. If you have no thermometer, how can you tell when the metal is the proper temperature and ready to be used?

1. When the metal takes on a bluish color
2. When a paper inserted into the metal and removed immediately comes out scorched and about to burst in flames
3. When the metal pours easily from a ladle
4. When a small stick of pressboard inserted in the metal and removed immediately turns black

9-25. The joint must be tinned in order for the wipe to come out properly. Tinning is accomplished by

1. pouring solder over the joint until it flows easily from the joint
2. placing a small furnace under the joint until the solder sputters when dripped on the joint
3. directing a gasoline torch along the side of the joint until the solder flows easily
4. directing an acetylene torch over the joint until the solder flows easily on the joint

9-26. If you are experienced at the job of wiping a lead sleeve to a lead cable sheath, you may find that the wipe is improperly shaped, or later, when it is placed under an air pressure test, that it leaks. In the case of a misshaped wipe, what is your best corrective action?

1. Using a gasoline torch to reshape or seal the sleeve wipe
2. Using a soldering iron to repair the sleeve discrepancies
3. Removing the sleeve and starting over
4. Melting the wiping lead off by pouring melted lead over it and making a new wipe

9-27. You connect the pressure gage to the lead sleeve to make an air pressure test. What should be the pressure of the air you pump into the sleeve?

1. 6 psi
2. 15 psi
3. 25 psi
4. 50 psi

- 9-28. If a splice is intended to connect cables that are to carry 10,000 volts, what splicing step differs from the corresponding step made on a 4,160-volt line?
1. The insulation has to be cut differently
 2. The splice area is purged of all air and moisture with hot oil and tightly wrapped oil-soaked varnished-cloth tape
 3. A completely different type of split copper connector is installed
 4. The split copper connector is bonded to the conductors differently
- 9-29. When finishing a cable splice with resin or similar compound, you check to see that the mold is long enough to cover the sheath on each end by at least:
1. 1/4 inch
 2. 1/2 inch
 3. 3/4 inch
 4. 1 inch
- 9-30. Cable tags should identify a cable and its voltage. At which of the following places should tags be attached to the cable?
1. Each manhole and cable termination point
 2. Each manhole only
 3. Each termination point only
 4. Each cable test point
- 9-31. What should you do to reduce voids in taping a splice?
1. Half lap and slant the tape in the connector area and at the splice ends
 2. Stretch the tape in the connector area and at the splice ends
 3. Tape the connector area and splice end to build up these areas first
 4. Use a forming tool in the connector area and at the splice ends
- 9-32. While injecting resin slowly into a tape-cast splice with a pressure gun, you should stop injecting when the:
1. resin runs out of the vent in the splice and all air escapes
 2. splice doubles in size
 3. gun pressure is unable to overcome the built-up pressure in the splice
- 9-33. Gas fumes are the greatest danger to personnel working in a manhole. What precaution must be taken to avoid this danger?
1. Wear a gas mask
 2. Make a gas test before starting work and ventilate the manhole if necessary
 3. Take a power blower into the manhole and operate it at all times for ventilation
 4. Lower an oxyacetylene torch into the manhole before entering to burn off the gas fumes
- 9-34. Which of the following practices is recommended when handling hot oil or lead?
1. Walk with a shuffling step when carrying a kettle of hot liquid; locate the furnace far enough away from manhole so that hot metal will not splash into them
 2. Move quickly but carefully when carrying a kettle of hot liquid; locate the furnace near working spaces so the kettle will not have to be carried far
 3. Move with long, slow steps when carrying a kettle of hot liquid; locate the furnace away from all working spaces to minimize danger of spills
 4. Always carry a kettle on a kettle carrier, making sure the path is clear; locate the furnace near the working space so the hot liquid need not be carried far

Learning Objective: Recognize fundamentals of lighting an airfield.

In items 9-35 through 9-38, select from column B the location of lights having the color in column A.

| A. Colors | B. Locations |
|---|---|
| 9-35. Red | 1. At the ends of the runway |
| 9-36. White (clear) | 2. At the runway landing area |
| 9-37. Blue | 3. On obstructions and hazards in and around the airport |
| 9-38. Green | 4. Along the edges of taxiways |
| 9-39. The barrettes used for military runway approach lighting are arrays of lights level with the runway. Each array consists of | 1. one steady light and five flashing lights 2. five flashing lights 3. one steady light 4. five green lights and five blue lights |
| 9-40. What is the main factor in lighting an airfield? | 1. Lighting the approaches 2. Sequential lighting 3. Lighting the runways 4. Expedient lighting |
| 9-41. Failures of the underground wiring used for airfield lighting can usually be predicted and prevented by | 1. special inspections after heavy rains or severe weather 2. periodic megger tests 3. periodic tests of regulators and transformers 4. frequent inspections of fixtures and pull-pits |

Learning Objective: Recognize operating principles of a telephone system and techniques of installing telephone lines.

- 9-42. In addition to a transmitter and a receiver at each of two locations, a single telephone circuit contains
1. a means of signaling
 2. a source of electrical energy
 3. a wiring circuit
 4. All the above
- 9-43. All of the following features are found in the telephone transmitter EXCEPT a
1. chamber packed with small grains of carbon
 2. flexible metallic diaphragm
 3. U-shaped magnet
 4. movable carbon disk
- 9-44. Sound waves cause the resistance in series with a telephone battery to vary. This is done by using the energy of the sound to
1. move an electromagnet in a magnetic field
 2. compress carbon granules between two electrodes
 3. move a permanent magnet inside a coil
 4. induce a voltage in an induction coil
- 9-45. Ringing current for telephone installations that use local battery sets is furnished by
1. dry cell batteries
 2. transformers
 3. hand-operated generators
 4. wet cell storage batteries
- 9-46. The induction coil in a telephone set serves as a
1. step-up transformer for transmitter signals only
 2. step-up transformer for transmitter and receiver signals
 3. stepdown transformer for signaling current and receiver signals
 4. stepdown transformer for transmitter signals

- 9-47. What practical purpose is served by the connection between the primary and secondary of the induction coil in a typical field telephone set?
1. The number of turns in the primary coil is reduced
 2. The number of turns in the secondary coil is reduced
 3. Fewer handset cord conductors are needed
 4. Voice currents from the transmitting to the receiver in the same set are eliminated
- 9-48. The magnetic field of the hand-operated generator used in telephone circuits to provide signaling service is provided by exciter coils.
- 9-49. The back-and-forth motion of the ringer armature in a telephone set is produced by
1. breaker contacts on the clapper
 2. current alternations in the ringing signal
 3. a spring switch on the magneto crank
 4. a spring-mounted contact on the hook switch
- 9-50. A long telephone transmission line is one whose length equals or exceeds the wave length of the transmitted signal.
- 9-51. You can reduce the attenuation in a long field wire line by increasing the
1. resistive load across the line
 2. series capacitance of the line
 3. shunt inductance across the line
 4. series inductance of the line
- 9-52. When used in conjunction with a 2-wire circuit in an emergency installation, a 1-wire ground return circuit proves to be especially sensitive to
1. attenuation
 2. inductive interference
 3. capacitive coupling
 4. mutual induction
- 9-53. If you run field wire on poles that carry open wire lines, you must be certain that
1. greater-than-normal sag is left in the field wire
 2. the field wire is placed above the open wire
 3. less-than-normal sag is left in the field wire
 4. the field wire is placed below the open wire
- 9-54. Assume that you wish to link a newly installed exchange at an advanced base with a nearby exchange that was set up earlier. Which of the following cables will you use for this purpose?
1. Post cable
 2. Toll cable
 3. Exchange cable
 4. Trunk cable
- 9-55. When you run a telephone cable on poles, you will usually need a cable car to
1. install the suspension strand
 2. pull the cable into position
 3. install the cable rings and dragline
 4. tension the suspension strand
- 9-56. When installing telephone lines at an advanced base, you will normally use pole-mounted terminal boxes to
1. join cable stubs to distribution frames
 2. join buried cables to overhead open wires
 3. connect drop wires to main cable stubs
 4. terminate cables at exchanges

Assignment 10

Communications Systems

Textbook: NAVEDTRA 10636-R: Pages 393-427

Learning Objective: Identify operating principles of a telephone switchboard.

10-1. Incoming lines to a switchboard office terminate on

1. switchboard terminals
2. distribution frames
3. terminal bus bars
4. connector banks

10-2. Terminals on the vertical side of a type-B switchboard are used to connect

1. outside lines to jumpers
2. outside lines to line jacks
3. line jacks to jumpers
4. jumpers to fuses and arresters

10-3. Automatic signalling in a common battery line circuit is accomplished by the use of

1. relays
2. series-connected lamps
3. parallel-connected lamps
4. cutoff jacks

10-4. The universal cord circuit is commonly used in military switchboards because it permits

1. operation of common battery and local battery sets through a single exchange
2. common battery operation of local battery sets
3. operator selection of common battery or local battery operation
4. automatic relay selection of called telephones

10-5. Assume that several conversations are taking place through a switchboard at one time. To select and cut into one of these circuits, the operator must use a

1. plug and hook switch
2. plug
3. lever switch
4. plug and key switch

10-6. Switchboard ringing machines generate an output frequency that is the equivalent to

1. 10 Hz
2. 20 Hz
3. 30 Hz
4. 40 Hz

Learning Objective: Recognize practices to the installation of a telephone subset.

10-7. When you install a telephone subset in a building, you must place a lightning arrester or other protective device between the

1. main line and terminal box
2. terminal box and drop wire
3. drop wire and connecting block
4. connecting block and instrument

- 10-8. Why is a drop wire clamp used on a drop wire?
1. To support the cable stub where it joins the drop wire
 2. To keep the weight of the pole-to-building run from straining the rest of the drop wire
 3. To keep the pole-to-building run of drop wire from sagging
 4. To support the drop wire where it runs along the outside of the building
- 10-9. Which of the following devices is used to protect drop wire where it enters a building?
1. Screw eye
 2. C-knob
 3. Porcelain tube
 4. S-knob
- 10-10. In grounding a lightning arrester, you should, when possible, connect its center terminal to a
1. gas pipe
 2. lightning rod
 3. cold water pipe
 4. sprinkler pipe
- 10-11. You are to connect a drop wire directly to an open main run wire. What type of support should you use for the drop wire when training it along the crossarm of a pole?
1. C-knob
 2. Insulated screw eye
 3. Bridle ring
 4. Drive ring
- 10-12. Which drawing in figure 10A shows the proper way to connect a drop wire to a binding post?
1. A
 2. B
 3. C
 4. D
- 10-13. The wire which must always be connected to the right-hand terminals of protectors and connecting blocks is the
1. ringer wire
 2. hook wire
 3. tracer wire
 4. tip line
- 10-14. You can identify the hot or negative wire at any point in interior telephone wiring by the
1. raised thread in the outer covering
 2. red tracer thread
 3. ridged insulation
 4. tinned copper conductor
- 10-15. If several telephones connect to a single line, you will probably have to install a bell circuit for signaling recipients of calls. How is the signaling circuit related to the multiset telephone wiring?
1. The telephone ringers are controlled by an external power source and push-buttons
 2. External signaling devices and control buttons receive power from the telephone battery
 3. External pushbuttons control ringing of the instruments
 4. The signaling circuit is completely independent of the telephone wiring

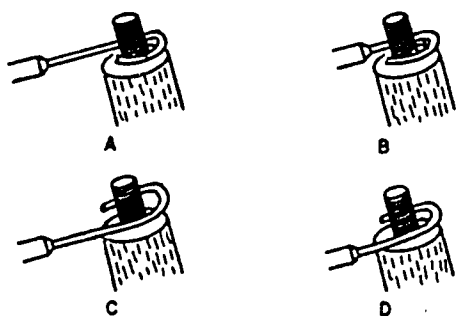


Figure 10A

Learning Objective: Indicate fundamentals of field telephone systems and techniques of installing, operating, maintaining, and troubleshooting them.

- 10-16. Which of the following items of military telephone equipment includes its own 120-volt a-c power source?
1. TC-2
 2. TFC-7A
 3. SB-22/PT
 4. TA-312/PT
- 10-17. The SB-22A/PT switchboard gets its power from
1. a local 24-volt d-c generator
 2. local batteries
 3. a 110-volt single-phase line
 4. a 110-volt single-phase generator
- 10-18. The 12-line switchboard is designed to interconnect
1. common-battery telephone lines for units up to and including a battalion
 2. common-battery telephone lines for units smaller than a battalion
 3. local-battery telephone lines for units smaller than a battalion
 4. local-battery telephone lines for units up to and including a battalion
- 10-19. The line signal for an SB-22A/PT switchboard is located in the
1. operator's pack
 2. line pack
 3. generator section
 4. front cover
- 10-20. What device signals the operator of a local-battery telephone system?
1. Ringing machine
 2. Buzzing machine
 3. Electromechanical line signal
 4. Solenoid-actuated click device
- 10-21. The indicator ball on a 12-line switchboard is restored by
1. an electromechanical device connected to the drop
 2. an electromagnet connected to the jack
 3. the insertion of the operator's cord plug into the line jack
 4. the switchboard operator, manually
- 10-22. The operator of an SB-22A/PT switchboard can interconnect phones by using the
1. answering cord and a calling cord
 2. answering cord and a talk-ring cord
 3. operator's cord pack and a line drop
 4. operator's cord pack and a line pack
- 10-23. The purpose of the ringing equipment on the operator's pack of the 12-line switchboard is to permit the operator to connect ringing current to
1. the calling telephone
 2. the called telephone
 3. either the calling or the called telephone
 4. the alarm equipment
- 10-24. The operation of the alarm equipment on the operator's pack of the 12-line switchboard indicates to the operator that
1. one of the line pack drops has operated
 2. a particular station is signalling the switchboard
 3. one of the stations is inoperative
- 10-25. In a properly installed SB-22A/PT switchboard, how many pairs of BA-30 (1.5-volt) dry cells are used and what voltage does each pair supply?
1. 2; 6 v
 2. 2; 3 v
 3. 1; 3 v
 4. 1; 1.5 v
- 10-26. When should you make the ground connections on the 12-line switchboard?
1. After connecting the telephone wires and installing the batteries
 2. After connecting the telephone wires but before installing the batteries
 3. Before connecting the telephone wires
 4. Before testing the line packs and operator's pack
- 10-27. Where should the top of the ground rod for the 12-line switchboard be with respect to the surface of the ground?
1. 3 in. above the surface
 2. 6 in. above the surface
 3. 3 in. below the surface
 4. 6 in. below the surface

- 10-28. How can two 12-line switchboards be arranged to handle as many as 29 lines?
1. By utilizing additional field phones for the extra service
 2. By installing the smaller, more modern line packs
 3. By installing two of the served phones on one pair of binding posts
 4. By removing the operator's pack from one switchboard and installing five line packs
- 10-29. When two 12-line switchboards are stacked, each board receives its power from
1. its own dry-cell batteries
 2. the dry-cell batteries of the other set
 3. the set with 12 line packs
 4. the set with 17 line packs
- Items 10-30 through 10-35, refer to the troubleshooting procedures for a 12-line switchboard.
- 10-30. The most frequent cause of improper functioning of the switchboard is
1. night alarm switch left on
 2. dirt or corrosion on the telephone jack springs
 3. loose wire connections
 4. weak dry cells
- 10-31. The user of a particular telephone cannot signal the operator because the drop on his line does not function. If everything else functions normally, the trouble is probably caused by
1. rundown batteries
 2. a defective handset-headset
 3. a defective line pack
 4. a defective operator's pack
- 10-32. The operator cannot talk to or receive calls from any of the telephone users. Which of the following could cause this problem?
1. A defective handset-headset
 2. A defective operator's pack
 3. A defective line pack
 4. Each of the above
- 10-33. When two telephone users cannot communicate with each other, but the operator can communicate with each user separately, the trouble is probably caused by
1. rundown batteries
 2. a defective handset-headset
 3. a defective operator's pack
 4. a defective line pack
- 10-34. If the operator cannot ring any field telephone and everything else functions normally, the trouble is probably caused by
1. rundown batteries
 2. a defective handset-headset or rundown batteries
 3. a defective operator's pack
 4. a defective operator's pack or line pack
- 10-35. The operator's alarm fails to operate when the drop of a line pack indicates that someone is calling the operator. Which of the following could be causing the trouble?
1. Defective line pack
 2. Defective operator's pack
 3. Rundown batteries
 4. Each of the above
- 10-36. If the internal batteries are not used, what external source is required to power the TA-312/PT?
1. 3 v, alternating current
 2. 6 v, alternating current
 3. 6 v, direct current
 4. 10 v, direct current
- 10-37. Which of the following maintenance requirements is performed weekly rather than daily?
1. Checking the handset for proper mechanical action
 2. Checking the battery compartment for general deterioration
 3. Checking the buzzer
 4. Cleaning exterior surfaces

In items 10-38 through 10-40, select from column B the hookup system for the EE-8 that has the features in column A.

| | <u>A. Features</u> | <u>B. Hookup Systems</u> |
|--------|---|---|
| 10-38. | Has ranges up to 360 miles and uses hand generator for signaling | 1. CB switchboard 2. LB switchboard 3. Point-to-point |
| 10-39. | Has ranges up to 72 miles and uses hand generator for signaling | 4. Local-to-point |
| 10-40. | Uses local batteries for transmissions and common batteries for signaling | |

- 10-41. In what operating state should you leave the handset if the handset is momentarily not in use?
1. Switch in "Off" position, batteries removed
 2. Switch in "Off" position, batteries left in
 3. Switch in "On" position, batteries removed
 4. Switch in "On" position, batteries left in

Learning Objective: Explain the operation and identify the components of an automatic telephone exchange of the type used at advanced bases.

- 10-42. The switchboard cord circuits of a manual telephone system are replaced in the dial system by
1. a dial mechanism in the subset
 2. switching mechanisms electromechanically operated by remote control
 3. relays in the subset base
 4. pole-mounted line selectors
- 10-43. Which of the following voltages will serve as a source voltage for operating efficiently the equipment of a step-by-step, common-battery, automatic dial telephone?
1. 18-volt a-c
 2. 18-volt d-c
 3. 48-volt a-c
 4. 48-volt d-c

- 10-44. Which of the following switches serves as the basic unit of the step-by-step system?

1. Linefinder
2. Connector
3. Strowger
4. Selector

In items 10-45 through 10-47, select from column B the function of the component in column A.

| | <u>A. Components</u> | <u>B. Functions</u> |
|--------|----------------------|---|
| 10-45. | Linefinder | 1. Extends the transmitter to the connector by the first digit dialed |
| 10-46. | Connector | 2. Makes the extension between the transmitter and receiver |
| 10-47. | Selector | 3. Finds the calling station 4. Controls the linefinder |

- 10-48. What factor determines the number of finder-connector links in a basic finder-connector system?

1. Number of phones of any type
2. Number of phones equipped to originate calls
3. Capacity for simultaneous calls
4. Extent of executive cut-in service

- 10-49. Concerning the impulses to the switching mechanism, the number dialed on a telephone determines their

1. number
2. intensity
3. duration
4. rate

- 10-50. In a 1,000-line system, the dial tone indicates that a connection has been made from

1. calling telephone to receiving telephone
2. finder to connector
3. finder to selector
4. selector to receiving telephone

610

- 10-51. The procedure pattern of a dial system of more than 10,000 lines is the same as that of a 1,000-line system, except that
1. two dial tones are heard
 2. an additional selector is necessary
 3. the number of linefinders is doubled
 4. one set of wipers is used

Learning Objective: Identify functions of the basic components of a crossbar switching system.

- 10-52. What component of a crossbar office transmits numbers, in special codes, that other offices are set up to receive?
1. Marker
 2. Originating register
 3. Sender
 4. Number group frame
- 10-53. A telephone line which begins and ends in the same central office is called a/an
1. outgoing trunk
 2. incoming trunk
 3. interoffice trunk
 4. intra-office trunk
- 10-54. The movement of a horizontal and vertical bar in a crossbar switch closes a set of
1. relays
 2. crosspoints
 3. electromagnets
 4. originating registers
- 10-55. The component in a switching network which records the numbers dialed is the
1. marker
 2. incoming register
 3. originating register
 4. outgoing sender
- 10-56. What component of a switching network is an electrical telephone directing?
1. Marker
 2. Incoming register
 3. Originating register
 4. Number group frame

Assignment 11

Interoffice Communications Systems; Telephone
Cable Splicing; Administration

Textbook NAVEDTRA 10636-H: Pages 429-469

Learning Objective: Recognize operating principles and installation and troubleshooting procedures of interoffice communications equipment.

- 11-1. You are installing an intercom system using a master station with a capacity of 6 remote speaker-microphone units. If 3 of the remote units are made into master stations, how many remote speaker-microphone units may be installed?
1. 3
 2. 5
 3. 7
 4. 9
- 11-2. The pilot light is illuminated on the master station of an intercom system when
1. a selector switch is in the ON position
 2. the talk-listen switch lever is in the TALK position
 3. an annunciator springs outward
 4. the equipment is turned on
- 11-3. Under normal operating conditions of an intercom system, the master station talk-listen switch lever is kept in what position?
1. TALK
 2. LISTEN
 3. OFF
 4. IDLE
- 11-4. When the operator of an interoffice communications system originates a call from the master station to a party at a remote station, he puts the switch for the remote station in the ON position, depresses the talk switch, and speaks to the party.
- 11-5. When an intercom system is installed, No. 22 to No. 19 twisted pair wire must be used for the
1. voice lines
 2. annunciator lines
 3. voice lines and annunciator lines
 4. voice lines and the annunciator lines when the stations are farther than 4,000 feet apart
- 11-6. All connections of the master station unit of an intercom system should be made in or at the
1. speaker microphone
 2. selector panel
 3. junction box
 4. pushbutton terminal block
- 11-7. When should the circuit wiring of an intercom system be checked for maximum resistance?
1. Before the wiring is installed
 2. After the wiring is installed, but before the connections are made
 3. After the wiring is installed and the connections are made
 4. After the system has been in operation for approximately 10 hours

11-8. The feel operation is used to

1. detect dirt on the equipment
2. determine whether moving parts move freely
3. locate broken components
4. locate overheated components

11-9. What is the most common cause of failure at master stations?

1. Burned-out resistor
2. Faulty tube
3. Poorly soldered connection
4. Shorted transformer

11-10. Assume that you are moving a defective selector switch from an intercom master station. What should you do before unsoldering the leads connected to the switch?

1. Clean the solder joint
2. Check the leads for damage
3. Remove the insulation from the end of the leads
4. Tag the leads

Learning Objective: Recognize techniques of maintaining and troubleshooting communications systems.

11-11. Overheating and gassing of storage battery cells during charging is a common indication of

1. excessive charging current
2. excessively low specific gravity
3. simultaneous discharging by internal leakage currents
4. poor terminal connections

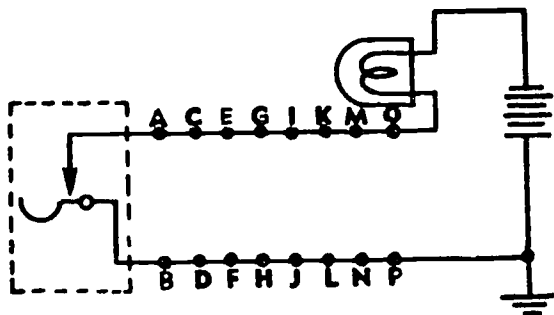


Figure 11A

Items 11-12 through 11-14 are based on the telephone circuit shown in figure

11A.

11-12. Assume that the line is grounded between points M and K. You should hear a click through your test telephone when you connect it in series with points

1. A and C
2. E and G
3. I and K
4. M and O

11-13. Assume that the signal lamp at the switchboard lights continuously and the circuit is noisy. Where do you first place your test telephone to trace the location of the trouble?

1. In series with points M and O
2. In series with points N and P
3. Across points O and N after disconnecting N and P
4. Across points M and P after disconnecting M and O

11-14. Assume that you are tracing a short in the telephone circuit. If you are following standard tracing procedure and the short is between points C-E and D-F, the first time that you should hear no click through your test telephone is when you connect it in

1. series with points M and O
2. series with points F and H
3. series with points D and B
4. parallel with points A and C

11-15. You have found that the trouble with an inoperative subset circuit is not due to a malfunction in the subset itself. Where is the best place for you to begin testing to locate the trouble?

1. Base of the subset
2. Protector unit
3. Pole terminal box
4. Main distribution frame

11-16. Which of the following components of a switchboard require only monthly inspection?

1. Protector blocks
2. Shutter latches
3. Carbon blocks
4. Relays and capacitors

Learning Objective: Select the type of telephone cable to be used in a given type of installation.

In items 11-17 through 1-19, match the type of installation in column A by selecting from column B the type of telephone cable to install.

| A. Types of Installation | B. Types of Cable |
|-------------------------------|--------------------------|
| 11-17. Switchboard | 1. Lead-covered cable |
| 11-18. Underground in conduit | 2. Tape-armored cable |
| 11-19. Aerial | 3. Silk and cotton cable |
| | 4. Polyethylene cable |

Learning Objective: Identify principles and techniques of splicing lead-sheathed cable.

11-20. Assume that a CE2 splicing a cable has removed the sheath. At what point in his procedure should he clean the lead sleeve and put in on the cable?

1. After cleaning the ends of the cable
2. After preparing the sleeve for use by squaring up the ends
3. After removing the insulation from the individual wires
4. After putting the cotton sleeves on the individual wires

11-21. When a telephone cable is to be spliced, the first thing to be done is to remove a section of sheath from the end of each cable. Once the decision on how much of the sheath to remove has been made, the following steps must be carried out: (A) cleaning a 4-inch section of the remaining sheath, (B) actually splitting and removing part of the sheath, and (C) ringing the cable at the intended distance from the end. In what order are these steps taken?

1. A, C, B
2. B, A, C
3. C, B, A
4. C, A, B

11-22. Assume that a CE2 who is about to boil out the insulation where a splice is to be made does not have a thermometer capable of reading more than 350°F. When should he consider the paraffin hot enough to pour over the sheath?

1. When the paraffin forms a slight bluish ring at the edge of the pot
2. When the paraffin forms a dry ring on the outside of the pot, about 2 inches wide at the widest point
3. When a piece of paper, plunged into the paraffin and removed half a minute later, comes out brown
4. When the paraffin begins to form a dry ring on the outside of the pot

11-23. What is the advantage of the desiccant method over the paraffin boiling-out method for removing moisture from the insulation in lead-sheathed cable?

1. No objectionable fumes are produced
2. The fire hazard is eliminated
3. It is safer to use on interior splicing jobs
4. Each of the above

11-24. Which of the following factors should you consider first when identifying conductors?

1. Whether the exposed end of the cable faces toward or away from the central office
2. Geometric pattern of the cable groups
3. Number of twisted pairs in the cable
4. Problem of locating the tracer pairs in the cable

11-25. How are the color-coded groups arranged in a cable with 200 pairs?

1. 6 groups of 25, 4 groups of 8, and 2 groups of 9
2. 2 groups of 100
3. 8 groups of 25
4. 4 groups of 50

11-26. What is the purpose of a tracer pair?

1. To establish the point from which conductor count begins
2. To establish communication with a helper
3. To provide for an extra telephone outlet when new service is desired
4. To indicate which pair is to be spliced first and to provide emergency communication prior to the completion of the splice

11-27. Two pairs of wires have been selected from a cable, and are to be joined. Which of the following is the best sequence to follow when tying the wires?

1. Slip on cotton or plastic sleeves; twist wires together, and cut to proper length
2. Cut wires to proper length; strip insulation; slip on cotton or plastic sleeves; twist wires
3. Strip insulation; slip on cotton or plastic sleeves; twist wires; cut to length
4. Twist all four wires together with a half turn; cut to length and strip insulation; separate wires and slip on plastic or cotton sleeves; twist the joints

11-28. What should you do after splicing all the pairs of conductors and before sliding the lead sleeve into place?

1. Tap around the bundle lightly with a mallet, so the lead sleeve will fit the bundle properly
2. Wrap the bundle with two layers of dry muslin
3. Rearrange the spliced conductors so they will fit the lead sleeve
4. Wrap the bundle with a No. 18 wire

Learning Objective: Point out techniques of splicing silk-and-cotton insulated cable and polyethylene-insulated cable.

● Information for items 11-29 and 11-30.
Assume that destruction caused by a small fire in an office building has made it necessary to replace a cable head. The textile-insulated cable to be used has enameled conductors.

11-29. When desiccant is not used, what substance is used to dry the cable before the silk insulation is removed?

1. Paraffin
2. Taping oil
3. Beeswax or a special petroleum wax
4. Paraffin or beeswax

11-30. When splicing enamel-coated wires, what must you do after removing the insulation from all the wires but before doing the actual splicing?

1. Remove the enamel from the exposed wires with long-nosed pliers or a wire scraper
2. Coat the wires with stearine to soften the enamel, then wipe them clean
3. Remove the enamel from the exposed wires by bending each wire at the desired point gently enough to crack the enamel without breaking the conductor, and then sliding the enamel off
4. Remove the enamel from the exposed wires by applying paraffin to loosen it and then sliding the enamel off

11-31. The subgroups into which you divide a basic 25-pair PIC group for laying up are referred to as

1. subpairs
2. units
3. strands
4. cores

11-32. One particular PIC wire pair group is identified with a red and blue binder. After removing the plastic sheath and the metal shield but before completely removing the binder, you must mark the wire group with

1. a tag tied to the group and stamped with its pair numbers
2. one red and one blue insulated wire wrapped around the group
3. strips of the binder

11-33. After you have made and soldered a splice in a PIC group you ordinarily cover the splice with

1. friction tape
2. plastic tape
3. a filled plastic sleeve
4. a wax-impregnated cotton sleeve

11-34. Assume that a 50-pair PIC is being spliced to another 50-pair PIC. The splice bundles will be covered with a short base enclosure. The probable layup of sleeved joints and the splice bundles arrangement will consist of

1. 2 bundles of 25 joints each
2. 2 bundles of 50 joints each
3. 2 bundles of 33 joints each and one of 34 joints
4. 2 bundles of 32 joints each and one of 36 joints

11-35. A layup of spliced conductors is made waterproof and accessible for reopening by fitting it with butyl rubber enclosure.

Learning Objective: Identify steps in the procedure for splicing plastic-sheathed cable to lead-sheathed cable.

Items 11-36 through 11-42 concern the method for splicing a plastic-insulated cable to a paper-insulated lead-sheathed cable in a straight splice. The wires are being jointed inside a building.

11-36. The lead-sheathed cable and the plastic-insulated cable are prepared to receive the lead sleeve by cleaning the areas where the sleeve will join the cable sheaths. This cleaning is done by

1. scraping 4 inches of the lead sheath and scuffing (with sandpaper) 7 inches of the plastic sheath
2. scuffing 4 inches of the lead sheath and scraping 7 inches of the plastic sheath
3. scraping 7 inches of the lead sheath and scuffing 4 inches of the plastic sheath
4. scuffing 7 inches of the lead sheath and scraping 4 inches of the plastic sheath

11-37. In preparing the lead sleeve selected for the splice cover, you clean

1. the entire sleeve both inside and out
2. the outside of the sleeve at both ends
3. the inside of the sleeve at both ends
4. inside the sleeve at the end that goes over the PIC and outside the end that goes over the lead-sheathed cable

11-38. In the procedure for casting the plastic end seal for a cable splice, when should you move the wires back and forth slightly to aid penetration of the liquid?

1. While pouring the casting mixture into the form
2. While moving the casting form up to the casting position
3. Before preparing the casting mixture
4. After one-half of the casting mixture has hardened

11-39. The length of the twisted and soldered part of the joint connecting two conductors is within the range of

1. 7/8 to 2 inches
2. 3/4 to 1 3/4 inches
3. 1 3/8 to 1 3/4 inches
4. 1 1/2 to 2 3/4 inches

11-40. What substance is placed in the conductor splice area just prior to the first wrapping operation?

1. Oil
2. Wax
3. Sealing compound
4. Desiccant

11-41. Before soldering, the shield in the PIC should be connected to the lead sheath of the paper-insulated cable by

1. wrapping it completely around the splice area and around the lead sheath
2. bringing it straight across the splice area and around the lead sheath
3. wrapping it loosely around the splice area and attaching it under the lead sheath
4. threading it between the wires in the splice area and attaching it to the lead sheath

11-42. How is the wire cloth wrap secured to the plastic sheathing of the PIC?

1. It is taped on
2. It is soldered where the sheath and cloth overlap
3. It is embedded by softening the plastic sheath with a hot soldering iron
4. It is fastened with epoxy resin and sealed with a hot soldering iron

Learning Objective: Identify techniques of splicing plastic-covered cable for a direct-burial installation.

11-43. All conductors passing through the opening of textbook figure 11-26 are cut and connected to the terminal block.

11-44. What device provides shield continuity in a direct-burial cable that has been brought out of a trench for splicing?

1. Pigtailed conductors
2. Bonding harness
3. Splice housing
4. Terminal block

11-45. What means is used to attach a bonding harness to the cable shield?

1. Hose clamp
2. Tie wire
3. Compression clip

To answer items 11-46 through 11-49, refer to the splicing procedure of textbook figure 11-31.

11-46. What is done to the loose ends of direct-burial wire after insulation is removed from them?

1. They are twisted together, then placed in solderless wire connectors
2. They are placed into insulated wire connectors, which are then crimped
3. They are placed into split-bolt connectors, which are then tightened securely

11-47. The shield wires of direct-burial are spliced by twisting their loose ends together, pigtailling them, inserting into a solderless wire connector, and twisting into position.

11-48. Why are the conductors and shield wires of direct-burial wire aligned and taped after splicing?

1. To keep moisture out of the splice
2. To insulate the conductors from the shield wires
3. To bundle them for positioning in a mold

11-49. At what point in the procedure for splicing direct-burial wire is the casting compound prepared and poured into a mold?

1. After the conductors and shield wires are bundled, but before they are placed in the mold
2. After the conductors and shield wires are placed in the mold, but before the mold is set into position
3. After the mold is set into position

Learning Objective: Point out techniques of repairing a lead-sheathed cable.

11-50. CE2 Grandle is assigned to repair a deep narrow crack in an aerial cable. The crack extends all the way through the sheath to the insulation. He sets up the splicing platform by the fault in the cable, wirebrushes the section of sheath to be split, and rubs the cable with stearine where he intends to make his cut. In what order does he use his tools as he goes through the procedure for opening the sheath?

1. Small cable stripper blade, large cable stripper blade, small cable stripper blade, cable pliers, wooden wedges
2. Large cable stripper blade, small cable stripper blade, large cable stripper blade, wooden wedges, cable pliers
3. Small cable stripper blade, large cable stripper blade, cable pliers, wooden wedges
4. Large cable stripper blade, small cable stripper blade, cable pliers, wooden wedges

11-51. When soldering closed a seam in a telephone cable sheath, what should you do after the pants are set?

1. Clean the sheath with a scoring tool
2. Close the sheath so the edges of the cut are 1/4 inch apart
3. Wirebrush the seam
4. Apply stearine to the portion of the seam to be soldered

11-52. A piece of pressboard is put into the opening in a split lead sheath to keep from damaging the cable while the opening is being sealed.

11-53. Which of the following methods is recommended for repairing small ring cuts and cracks in lead sheaths?

1. Wiping with lead
2. Wiping with liquid solder
3. Soldering with a copper
4. Soldering with an acetylene torch

Learning objective: Identify supervisory responsibilities for personnel management.

11-54. Which of the following is NOT a duty of the crew leader for an interior wiring project?

1. Initiating requisitions
2. Keeping time cards
3. Planning work assignments
4. Installing conduit

11-55. Which of the following is NOT a step in the work planning process?

1. Studying plans and specifications
2. Determining the capabilities of the workmen
3. Establishing daily goals
4. Maintaining an approachable attitude

11-56. The purposes of a crew leader's inspection are to teach, guide and direct.

11-57. A supervisor should keep his men informed on all matters that affect them personally.

Learning Objective: Identify principles of requisitioning materials and reporting labor.

11-58. The name and quantity of a requisitioned item are shown in which blocks of NAVSUP Form 1250?

1. No. 3, 4, and 5
2. No. 6, 7, and 8
3. No. 9 and 10
4. No. 13 and 14

11-59. The two categories of total labor for timekeeping and labor-reporting purposes are

1. direct and indirect labor
2. indirect and overhead labor
3. productive and overhead labor
4. productive and direct labor

When answering items 11-60 and 11-61, refer to textbook figures 14-3 and 14-4.

11-60. How many man-hours were spent in training UT2 Johnson's crew on 11 January?

1. One
2. Two
3. Three
4. Four

11-61. How many man-hours did UT2 Johnson's crew contribute to direct labor on 11 January?

1. 10
2. 37
3. 38
4. 48

Assignment 12

Basic Electronic Components and Circuits

Textbook NAVEDTRA 10636-H: Pages 475-505

Learning Objective: Identify fundamentals of coding or rating resistors, capacitors, and chassis wiring.

- 12-1. Which of the following components would have a measurable effect on the operation of an a-c circuit?
1. Capacitor
 2. Inductor
 3. Resistor
 4. Each of the above
- 12-2. The power ratings of wire-wound resistors are usually restricted to which, if any, of the following?
1. 1/3 watt
 2. 1/2 watt
 3. 1 watt
 4. None of the above
- 12-3. What is the lowest possible tolerance of a wire-wound resistor?
1. 1 percent
 2. 2 percent
 3. 5 percent
 4. 10 percent
- 12-4. A 5,000-ohm composition resistor with a tolerance of 5% will measure between
1. 4,500 ohms to 5,500 ohms
 2. 4,750 ohms to 5,250 ohms
 3. 5,000 ohms to 5,500 ohms
- 12-5. The fourth color band on a composition resistor indicates the
1. first significant number
 2. second significant number
 3. multiplier
 4. tolerance
- 12-6. The third color band on a composition resistor indicates the
1. first significant number
 2. second significant number
 3. multiplier
 4. tolerance
- 12-7. In a fixed mica capacitor, the color code on the top row is black, orange and gray from left to right, and the bottom row is black, red and orange. What is the value of capacitance?
1. 38 pF
 2. 138 pF
 3. 380 pF
 4. 3800 pF
- 12-8. A black and yellow lead of a transformer would indicate
1. a tapped primary
 2. a tapped secondary
 3. the ground wire
 4. the high voltage side

In items 12-9 through 12-12, select from column B the color of the chassis wire that is connected to the component in column A.

| | <u>A. Components</u> | <u>B. Wire Colors</u> |
|--------|-------------------------------------|-----------------------|
| 12-9. | Ground, grounded element, or return | 1. Red |
| 12-10. | Power supply B plus | 2. Gray |
| 12-11. | Plate | 3. Black |
| 12-12. | A-C power supply | 4. Blue |

Learning Objective: Recognize the construction features and operating principles of vacuum tubes and transistors.

12-13. Cathodes are made of materials that emit electrons rapidly.

12-14. Which of the following is the result when the plate of a diode is negative with respect to the cathode?

1. Current flow will be from plate to cathode
2. Tube temperature will increase
3. Tube current will not flow
4. Tube current will increase

12-15. How many ways may a cathode be heated?

1. One
2. Two
3. Three
4. Four

12-16. A tube with two plates and one cathode is called a

1. diode
2. duodiode
3. triode
4. ductriode

12-17. A tube with eight pins on its base is called a

1. duodiode
2. triode
3. duotriode
4. Octal

12-18. How are tube sockets numbered?

1. Clockwise from the key when viewed from bottom
2. Counterclockwise from the key when viewed from the bottom
3. Either 1 or 2 above, depending on the tube envelope size

12-19. The heater or filament of a diode can be destroyed by

1. low voltage
2. excessive current
3. low current

12-20. Current flow through a diode produces a pulsating direct current which can be smoothed out by means of a

1. transformer
2. choke
3. filter
4. center-taped coil

12-21. Which of the following substances is considered the best conductor of electricity?

1. A substance whose orbiting electrons are loosely bound
2. A substance whose orbiting electrons are tightly bound
3. A substance whose electrical charge is zero
4. A substance whose electrical charge is positive

12-22. Which of the following substances is considered the best insulator of electricity?

1. A substance whose orbiting electrons are loosely bound
2. A substance whose orbiting electrons are tightly bound
3. A substance whose electrical charge is zero
4. A substance whose electrical charge is positive

12-23. In the atomic theory of electricity, a hole is defined as the

1. degree of impurity in the nucleus
2. chemical used in making the semiconductor
3. charge of the nucleus
4. vacancy left by an escaped electron

- 12-24. According to atomic theory, how do holes behave?
1. They move from negative to positive
 2. They move from positive to negative
 3. They remain stationary
- 12-25. What is the effect of adding arsenic to a germanium crystal?
1. It increases the number of free electrons
 2. It decreases the number of free electrons
 3. It increases the number of holes
 4. It decreases the number of holes
- 12-26. In a P-N junction diode, the voltage is said to be in the reverse direction when
1. current flows freely from positive to negative
 2. current flows freely from negative to positive
 3. the negative lead is on the P material
 4. the positive lead is on the P material
- In answering question 12-27, refer to figure 15-17 in the text.
- 12-27. Where is the reverse bias connected?
1. Between emitter and collector
 2. Between emitter and base
 3. Between base and collector
 4. Across the A battery
- In answering question 12-28, refer to figure 15-18 in the text.
- 12-28. What is the result of connecting an alternating signal to the emitter-base junction?
1. The current through the emitter-base junction is alternately increased and decreased
 2. The current through the base-collector junction is alternately increased and decreased
 3. The signal to the load is alternately increased or decreased
 4. Each of the above
- 12-29. Compared with the electron tube, the transistor is a/an
1. large and bulky unit
 2. easily damaged component
 3. poor source of heat
 4. big consumer of electric power
- 12-30. What is the identification of the case connection in the lower right-hand symbol of textbook figure 15-20?
1. Emitter
 2. Base
 3. Collector
 4. Ground
- 12-31. When replacing transistors the repairman should always rely on the shape of the replacement to determine connections.
- 12-32. What is the basic way of connecting a transistor?
1. Common or grounded base
 2. Common or grounded emitter
 3. Common or grounded collector
 4. Each of the above
- 12-33. What part makes the triode useful as an amplifier?
1. control grid
 2. screen grid
 3. suppressor grid
 4. load resistor
- 12-34. What is the effect of placing a positive charge on the control grid of a triode?
1. Shuts off plate current
 2. Decreases the signal to the tube
 3. Increases plate current
 4. Increases cathode bias
- 12-35. What effect, if any, does varying the plate voltage have on the operation of a triode?
1. Causes control grid voltage to vary
 2. Causes plate current to vary
 3. Shuts off plate current
 4. None
- 12-36. What effect does varying the control-grid voltage have on the operation of a triode?
1. Shuts off plate current
 2. Shuts off heater current
 3. Causes plate current to vary widely
 4. Causes grid current to vary widely
- 12-37. Which of the following is NOT considered a multielement tube?
1. Tetrode
 2. Pentode
 3. Triode
 4. Each of the above

- 12-38. Which of the following conditions is true with regard to the screen grid in a tetrode tube?
1. Increases capacitance of the tube
 2. Decreases capacitance of the tube
 3. Causes tube oscillations
 4. Suppresses plate current
- 12-39. Which of the following conditions is true with regard to the suppressor grid in a pentode tube?
1. Prevents tube oscillations
 2. Is negative with respect to the cathode
 3. Is positive with respect to the cathode
 4. Is the same potential as the cathode
- 12-40. Bias obtained from a battery or other constant power source is known as
1. fixed bias
 2. self-bias
 3. cathode bias
 4. grid-leak bias
- 12-41. What is the function of a grid-leak capacitor?
1. To provide a resonant circuit
 2. To leak off excess grid current
 3. To apply input signal to the grid
 4. Each of the above
- 12-42. Which of the following best describes cascaded amplifiers?
1. Amplifier stages that are connected in parallel
 2. Amplifier stages that are connected in series
 3. Amplifiers that are self-biased
 4. Amplifiers that are fixed-bias
- 12-43. Under which of the following conditions would an RC-coupled amplifier be used?
1. When voltage amplification is desired with little or no power output
 2. When voltage amplification is desired with a large power output
 3. When power amplification is desired with little or no voltage amplification
 4. When there is no need to cascade stages
- 12-44. Which of the following is an advantage of using an impedance-coupled amplifier over an RC-coupled amplifier?
1. Lower supply source required
 2. Smaller loss in power
 3. Better efficiency
 4. Each of the above
- 12-45. Where are impedance-coupled amplifiers generally found?
1. Last stage power output
 2. First stage power input
 3. Intermediate frequency stage
 4. Power supply unit
- 12-46. Which of the following is true regarding a transformer-coupled amplifier?
1. Improved frequency is obtained
 2. Higher gain is acquired
 3. Higher output is not gained
 4. Bias voltages are separated between stages
- 12-47. Connecting the plate of the driver stage to the grid of the driven stage results in a/an
1. single-source biasing
 2. inductance-coupled amplifier
 3. RC-coupled amplifier
 4. directly coupled amplifier
- 12-48. Which of the following is NOT an advantage of a directly coupled amplifier?
1. There is no phase distortion
 2. There is no voltage supply required
 3. There is no loss of frequency response
 4. There is a negligible time delay between stages
- 12-49. Which of the following is an advantage of single-source biasing?
1. Eliminates the need for a separate power supply
 2. Provides a built-in heat-sink
 3. Provides a higher output/input ratio
 4. Provides a higher frequency response
- 12-50. If a PNP transistor were connected as a common emitter with no signal applied, and the base resistor were to open, it would
1. decrease the amount of forward bias
 2. increase the difference in potential between the base and emitter
 3. decrease base-emitter current flow
 4. cause all signal to be lost

Learning Objective: Recognize principles and techniques of testing electron tubes.

- 12-51. Prior to inserting a tube in a tube tester, you should
1. allow for sufficient warmup of the tube tester
 2. be assured that the tube to be tested is defective
 3. ensure that controls are set to their proper positions
- 12-52. To protect the TV-7/U tube tester from damage due to overloads, it is provided with a
1. fuse in series with the transformer primary
 2. circuit breaker in series with the transformer primary
 3. lamp in series with the transformer primary
 4. fuse in series with the transformer secondary
- 12-53. When a vacuum tube is being tested with the TV-7/U tube tester and both plates of the neon lamp glow, what, if anything, is indicated?
1. A normal condition
 2. A short-circuited tube
 3. A gassy tube
 4. Nothing
- 12-54. When performing a gas test on a vacuum tube, you shift switch S from position 1 to position 2, and no change occurs in the meter reading. What, if anything, is indicated?
1. A normal condition
 2. A shorted tube
 3. A gassy tube
 4. Nothing
- 12-55. If a tube under test develops noise, what condition can be safely assumed?
1. The grid has a positive bias
 2. The tube is gassy
 3. A short exists between cathode and heater
 4. An open exists between cathode and suppressor grid
- 12-56. What is the purpose of conducting the filament activity test on an electron tube?
1. Estimate the remaining useful life of the tube
 2. Determine the number of short-circuited tube elements, if any
 3. Check for the presence of a leakage path between the cathode sleeve and heater wire
 4. Check for the presence of gas in the tube envelope
- 12-57. To perform an Ico test on a transistor using a TS-1100/U, it is necessary to
1. remove the transistor from the circuit
 2. leave the transistor in the circuit
 3. test with multimeter first
- 12-58. Which of the following is a safe practice in testing a transistor with a multimeter?
1. Remove the transistor from the circuit
 2. Leave the transistor in the circuit
 3. Ensure meter sensitivity is at least 10,000 ohms per volt
 4. Ensure meter input resistance is at least 5 megohms
- 12-59. When testing transistors with a multimeter, you should exercise care to ensure that internal voltage does NOT exceed 6 volts.
- 12-60. Which of the following is a safe practice in testing a circuit containing transistors?
1. Short circuit the transistors
 2. Discharge all capacitors in the test circuit
 3. Use an ohmmeter which passes more than 1 milliampere through the test circuit
 4. Use a multimeter with same impedance
- 12-61. When performing a leakage test, you should replace the transistor if the leakage current is less than or equal to the allowable current.
- 12-62. The transistor test set TS-1100/U eliminates interference from direct currents in transistor circuits by
1. shorting all transistors
 2. shorting all capacitors
 3. testing with alternating current
 4. utilizing an oscillator

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